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ABSTRACT

The teaching guide for an elementary geography in-service course provides a framework for broad geographic understandings. The emphasis is upon helping teachers better understand the structure of geography themselves so they may implement a social studies program in which students use the facts of geography to develop understandings of basic concepts and skills in critical analysis. Eight major areas are: Our Globe and Grid; The Essence and Use of Maps; Climate and Man; The Face of the Earth; Resources, Man, and His Environment; Urban Man; World Regions; and Japan: A Regional Study. Each unit is organized around a number of problems, generalization and understandings, concepts, tools and resources, methods of approach, and activities that are related to the unit topics. The 16-clock-hour course includes eight 2-hour sessions. An appendix is included that lists transparencies by title or content. (SJM)

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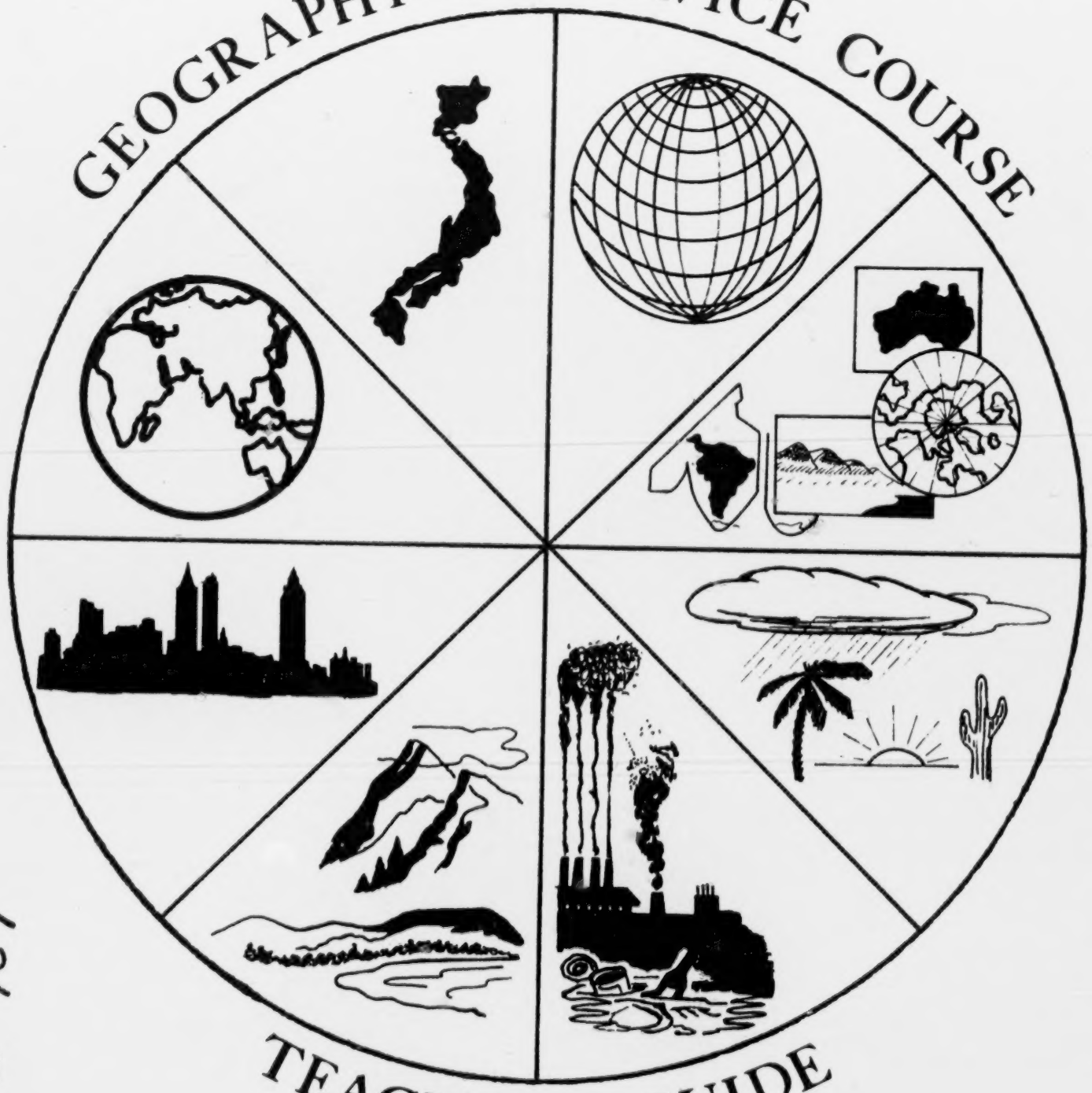
# GEOGRAPHY IN-SERVICE COURSE



# TEACHER'S GUIDE

SP 002 989

Texas Education Agency
Austin, Texas
1971

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EDUCATION & WELFARE
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# GEOGRAPHY IN-SERVICE COURSE

## TEACHER'S GUIDE

Texas Education Agency
Austin, Texas
1971

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Reviews of the local educational agency pertaining to compliance with Title VI, Civil Rights Act of 1964, will be conducted periodically by staff representatives of the Texas Education Agency. These reviews will cover at least the following policies and practices:

1. Enrollment and assignment of students without discrimination on the ground of race, color, or national origin.

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3. Non-discriminatory use of facilities.

4. Public notice given by the local educational agency to participants and other citizens of the non-discriminatory policies and practices in effect by the local agency.

In addition to conducting reviews, Texas Education Agency staff representatives will check complaints of non-compliance made by citizens and will report their findings to the United States Commissioner of Education.

# GEOGRAPHY IN-SERVICE COURSE
# TEACHER'S GUIDE AND TRANSPARENCY OUTLINE

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Division of Program Development
Texas Education Agency
1971

## MONITOR TEACHER'S GUIDE

### Purpose

The elementary geography in-service course was designed to help elementary teachers better understand the structure of geography and to assist them in implementing a social studies program in which students use the facts of geography to develop understanding of basic concepts and skills in critical analysis.

### The Course

The 16-clock-hour course will include eight 2-hour sessions, each of which will concentrate on major concepts or concerns which provide a framework for broad geographic understandings. The eight major areas are:

| | |
|---|---|
| Our Globe and Grid | Resources, Man, and His Environment |
| The Essence and Use of Maps | Urban Man |
| Climate and Man | World Regions |
| The Face of the Earth | Japan: A Regional Study |

### In-Service Procedure

Each of the eight 2-hour class sessions will be organized as follows:

First hour: A taped lecture on a major theme or concept will be given by an eminent, nationally known geographer. The lecture will be fully illustrated with transparencies or slides. A competent staff member from a local school in the area will serve as "monitor teacher" and will be at the controls of the tape recorder and manipulate the machines for transparencies and tapes during the lecture.

Second hour: The monitor teacher will lead group discussion of the major theme presented the first hour and suggestions for implementing the basic concepts for classroom instruction at the several grade levels and subject matter levels. If the group is large enough, it should be divided by grade levels for the discussion. One member of each group would serve as the discussion leader for that group. Prior to each session, copies of the teacher's guide should be duplicated to provide each participating teacher a copy.

Materials

Eight tapes
Teacher's guide with eight units and transparency content
Eight sets of visuals

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# UNIT I

# Our Globe and Grid

## UNIT I
## OUR GLOBE AND GRID

### Problem Set A

Problems

- How is geography defined?
- Why study geography?
- How does one study geography?

Generalizations and Understandings

Geography is the study of the characteristics of specific locations on the earth, the connections between places, and the arrangement of things both cultural and natural on the face of the earth.

Concepts

| | |
|---|---|
| geography | earth |
| sphere | location |

Tools and Resources

Dictionaries; globes, maps, project maps; visuals--such as No. 1 on the characteristics, connections and arrangement of places and things.

Methods of Approach

Analyze the word parts geo- (earth) and graphy (writing) and discuss kinds of geography.

## Activities

Students enjoy knowing where words originated and how they got their meaning. Have them look up geography and note the relationship to the Greeks. Ask the students what such a study as geography might be called on Mars, Venus, and other places in our universe.

Have students discuss some of the changing concepts in geography through the ages as Man learned more and improved his scientific tools--what tools, what men?

Have students report on the following men and their contributions to geography: Eratosthenes, Aristarchus, Strabo, Herodotus, Copernicus, Brahe, Ptolemy, Aristotle, Ibn Batuta, Al Idrisi or Edrisi, Ibn Khaldun, Varenius, von Humbolt, George P. Marsh, William Morris Davis, and others.

Working as a class, write a resume of geographical facts which the students in the classroom know. Project into the future what geography will mean.

# Problem Set B

## Problems

- What are the two big classes of geography?
- How can natural and cultural phenomena be related to the same map and globe regions?

## Generalizations and Understandings

Cultural geography shows man's influence on the natural geography of the earth. The earth influences man and man, in turn, influences the earth.

## Concepts

- characteristics
- cultural
- natural
- hemisphere

## Tools and Resources

Maps of only the natural environment, such as landform maps and topographic maps; maps showing a particular area separated from the rest of the region or continent (as a map of Southeast Asia showing the Viet Nam war area); space map showing only one aspect of space exploration; older and newer maps of an area or region.

## Methods of Approach

As an example of cultural geography, present maps and pictures showing river sites of cities in early days and contrast them with maps and pictures of the same sites today. Ask what cultural influences and what natural influences brought change.

## Activities

Compare modern maps to older maps of sites of various types of settlements (harbor cities, cattle trails, and railroad junctions) in the early days of a region.

Since we must know our own region to understand other regions, have the students find maps of their own area which are related to the cultural environment such as farming maps, city maps, water supply maps showing sources. Point out some of the relationships between the cultural and natural environments.

To begin specific map and globe study, have the students (perhaps at art time) make a papier-mache globe over a small blownup balloon to show the general shape of the earth. Then have the students draw in free hand the continents to show about where the land and water are.

Since everyone lives in two of the four possible hemispheres, have the students decide which two for a number of places.

# Problem Set C

## Problem

- How can the characteristics of a specific location be located and studied?

## Generalizations and Understandings

All points of location are at the intersection of a parallel and a meridian, and are expressed in degrees of latitude and longitude.

Meridians are lines of equal longitude. All points on a given meridian are the same number of degrees east or west of London, England, which itself is on the $0^{o}$ meridian.

Parallels are lines of equal latitude. All points on a given parallel are the same number of degrees north or south of the equator, which is the $0^{o}$ parallel.

## Concepts

grid
latitude
longitude
meridians
parallels
prime meridian
equator
angle
international date line
Tropic of Cancer
Tropic of Capricorn
Arctic Circle and Antarctic Circle
great circles

## Tools and Resources

Grid; spheres, desk spheres, and drawings of spheres with major parallels and meridians; maps of various sorts (see Activities).

## Methods of Approach

Use a huge styrofoam ball or other plain sphere with only one dot on it and ask students to identify the location of the dot. Contrast and compare the ball with a modern globe. Introduce meridians and parallels and note the major ones.

## Activities

Have students draw grids on circles of paper and identify dominant lines such as the equator. Draw and identify great circles.

Have students locate places on maps and globes by latitude and longitude. Then, have them locate places on road maps (free from the Texas Highway Department or many service stations).

Have students decide on some distant point and then plot the great circle routes to it from their town.

Have students find places on maps which do not have north at the top.

Have students find out on maps which countries are about the same latitude as theirs around the world. Which major landforms? In the Southern Hemisphere? Around the world?

From cultural and ethnic maps, have students find what types of people are found at their latitude and describe the cultures simply.

Locate areas mentioned in the newspaper.

## Problem Set D

### Problem

- How has man learned to project on a flat surface the facts shown on a globe?

### Generalizations and Understandings

Man designed maps to portray or symbolize characteristics shown by globes.

A map projection has certain qualities--area, shape, distance, and direction.

### Concepts

projections
conical
cylindrical
azimuthal
orthographical
periphery
Mercator
continents
horizonal
distortion

### Tools and Resources

Copies of various types of map projections, including the Mercator projection; orange and knife; globe and newspaper.

Methods of Approach

Cut a newspaper to fit a globe and tape it on. Then take it apart in class to show the problem of putting a sphere on a flat surface.

Cut an orange in half. Take out the inside pulp and juice, being careful to leave the peel intact. (A variety store should have a curved knife which is made for this sort of cutting.) In class have a student spread the orange "hemisphere" onto a flat surface to make a map. Note the tearing that must take place.

Show various kinds of projections and point out their strengths and weaknesses; point out the four qualities of maps and demonstrate how they are produced.

Activities

Have the students collect prints or make drawings of various map projections and analyze and record their qualities, limitations, and uses.

Have the students collect maps found in magazines and newspapers and determine the advantages of each projection.

Make maps of the local area (school, neighborhood, town) to discover the problems of cartography (mapping).

Make a Mercator grid, locating only the equator and one other parallel and two meridians (so that students can get the intervals). Have the students figure out the numbers for the other lines on the grid. Then give the students specific "fixes"--such as $6^{\circ}S$, $39^{\circ}30'E$; $45^{\circ}30'N$, $73^{\circ}35'W$; $30^{\circ}15'N$, $97^{\circ}42'W$--and have them locate these places on the grid. After their location, have the students take an atlas or globe and find out what cities they have located with the fixes.

Problem Set E

Problems

- What effect does rotation have on the earth?
- What is the purpose of the time zones and the international date line, and why is the date line necessary?

## Generalizations and Understandings

The rotation of the earth results in day and night, ocean currents, and atmospheric movement.

Man designed time zones to record time in relation to the rotation of the earth.

## Concepts

rotation
degrees
hours
day and night
zones
ocean currents
atmospheric circulation

## Tools and Resources

Globes; flashlights; maps with time zones, ocean currents, and atmospheric circulation.

## Methods of Approach

Show three world maps: one of the time zones, one of ocean currents, and one of atmospheric circulation. Discuss time zones, ocean currents, and wind systems experienced by the students.

## Activities

Using globes and flashlights, have students experiment with the effect of rotation on day and night. After the cause of day and night is understood, tilt the globe 23 1/2° on its axis if it is not already tilted so that the student can see visually why days and nights are not of equal lengths in those areas of the world away from the equator.

Have exercises in class to determine time in various places at a particular moment. Example: If it is 3:00 p. m. in New York, what time is it in Seattle and Tokyo? Have students decide what time it is in the other time zone of Texas at the class time in which they are studying geography.

Have students examine TV Guide or other national television schedules, and determine what various time zones they record; have the students find the names of all the time zones in the United States. Discuss why the zone lines are not straight, why Texas has Daylight Saving Time, who benefits from it and who does not.

Plan a trip involving several time zones and point out the problems. Then have the students create a diary of a trip, showing the problems of time zones and the international date line.

Calculate the time for an area of the world being studied for the classroom time period.

Have the students make a large time chart for the world at a given time.

## Problem Set F

### Problems

- What is the relationship of the earth to the sun and the moon?
- How do the revolution and rotation of the earth affect the wind and ocean currents?
- How can seasons be explained?

### Generalizations and Understandings

The earth is very small in relation to the sun and intercepts a minute amount of the sun's rays. The moon is far away and man has a great distance to travel to it.

The directions of the wind systems and the ocean currents are in part the results of the rotation and revolution of the earth.

The revolution and inclination of the earth develop seasons for specific locations as they are related to the equator and their angular position toward the sun.

### Concepts

revolution
inclination (tilting)
axis
orbit
parallelism
angles
seasons

## Tools and Resources

Tennis ball, basketball, BB (or something smaller), maps of ocean currents and wind systems, globes, light source, blank maps of the world, film, sink.

## Methods of Approach

Show a good film on revolution, rotation, inclination, and the seasons. Apply the ideas to the local setting both after the showing of the film and after the student activities.

## Activities

Using a basketball for the sun and a BB or something slightly smaller for the earth, have two students hold them 90 feet apart (this exercise can be done outside). Explain to the class that the size and the distance between the two are approximately the correct ratio and that the earth intercepts only about one billionth of the sun's rays.

Using a tennis ball for the moon and a basketball for the earth, have two students hold them 25 feet apart. Explain to the class that the size and the distance are approximately the correct ratio between the two. Have the "earth" student place his thumb flat on the globe. Explain to the students that the top of the thumb is approximately the height to which our astronauts and satellites orbit the earth.

To explain partially the effects of rotation and revolution on the major wind systems and the major ocean currents for the Northern Hemisphere, have classes view water in a sink going clockwise down the drain. Explain to them that this major directional flow is that of the major wind and ocean currents in this latitude in the Northern Hemisphere. The Southern Hemisphere is the reverse. Be certain to mention that some exceptions do exist in this flow pattern.

Have students draw maps of the major wind and ocean currents, perhaps inserting some of the exceptions in more advanced groups.

Have students rotate and revolve globes, being careful to keep the axes tilted and parallel, around a strong light source, such as a bright light bulb. Or, make a model using four small globes in orbit around the light bulb, being certain that the axes are inclined and parallel for the four seasons. Have the students then observe when the Northern Hemisphere is facing toward the sun for summer and when the Southern Hemisphere faces it. In addition, have them decide when there would be winter from the positions of the earth to the sun for both hemispheres.

# UNIT II

# The Essence and Use of Maps

## UNIT II
## THE ESSENCE AND USE OF MAPS

### Problem Set A

Problems

- What is a map?
- Why do we have maps?
- What are the essentials of a good map?

Generalizations and Understandings

Maps are symbols of the earth on paper.

Maps are tools for learning about the earth.

Maps, to be fully utilized, have specific essentials--title, legend, grid, scale, and date.

Concepts

| | |
|---|---|
| maps | grid |
| title | scale |
| legend | symbols |

Tools and Resources

Several different maps--a map with the five essentials, maps with at least one or two of the essentials--pictures of places, pages of printing from a book or magazine, a skyline picture of a city, an aerial photograph of the same city, a street map of the same city, classroom globe, and wall map.

## Methods of Approach

Show the students several maps and then ask them, "What are these?"

Show maps and alternate them with pictures and printed pages from books or magazines and have the students pick out the maps.

Show a picture of the skyline of a city, an aerial photograph of the same city, and a street map of it. Then ask the students the "Problem" questions, What is a map? Why do we have maps?

Using a large map or transparency with all five essentials, have the students list first and then point out the five essentials of a good map. Show as many maps as you can find to the students and have them pick out the essentials.

## Activities

Have the students collect maps and put them in a booklet. (They can find them in magazines and newspapers, on labels and in pictures.)

Have the students decide what essentials their maps have and which ones they lack.

Have the students find the essentials on atlas maps, classroom wall maps, and any other maps available.

Have the students check the classroom globe to determine if it has any of the essentials of a good map. Let the students decide why.

Have the students find maps which do not have all the essentials of a good map and let them discuss why they do not. (Do they take for granted certain knowledge on the part of the viewer? Are they used just for beauty?)

# Problem Set B

## Problems

- How can we read a map?
- What are the strengths and weaknesses of various maps?
- What basic skills are needed to read a map?

## Generalizations and Understandings

Reading a map involves skills just as reading a book does.

## Concepts

| | |
|---|---|
| direction | symbols |
| distance | shape |
| specific location | equal area |
| relative location | comparisons |

## Tools and Resources

Many types of maps, charts of symbols used in maps, pictures of the realities of the symbols, a compass.

## Methods of Approach

Review students on map qualities, map essentials and the grid. Then tell them about the skills which they will develop. Introduce them to the compass and let each student hold it and watch it point to the north. (The difference between magnetic north and geographical north might be explained at this time.)

## Activities

Orientation and direction:

Have students locate north with the noon shadow. Talk about what is north, south, east, and west outside the room first. Then have the students decide where to put the directions on the classroom walls. Have the students decide which way their desks face and who is to the east, west, north, and south of them.

Have the students collect or draw different kinds of compasses for a chart and collect pictures of different occupations which use compasses. Have the students explain the uses.

Have the students write directions to different places in the room. Put them in a hat and let the students draw them out one at a time. Having a starting point, see if the students can follow directions using the written paper. The same may be done verbally to strengthen skills in listening and giving oral directions.

Have the students describe the routes taken from their homes to the school or some other place, using only street names and cardinal directions (NSEW). While the student is giving the directions verbally, have the class on individual street maps, plot the trip. (Confusion is to be expected until the students become accustomed to using verbal directions.)

Pick a well-known location in your town. Have the students give the best directions they can to a stranger on how to get there from the school. This helps students realize that it helps to have blocks in cities. Compare the city blocks to latitude and longitude which form "globe blocks."

Have one student be "it." Give each child, except "it," a map of the city. Have "it" draw two locations in the city from a hat and describe how to get from one of these points to the other, using such terms as left, right, west. As "it" directs, have each student plot the route and see where they all end up! This game might be varied by specifying the most direct route, the most scenic route, or, with older children, the route with the lightest traffic.

Relative Location:

Have the students use the classroom and its directional orientation to determine their relative locations to each other and the teacher. Introduce not only the NSEW directions but also NE, NW, SE, SW. (Hugh is SE of Mona but NW of Susan.)

Show that a child in Chicago will state directions differently from a child in Texas. Have the children take different roles of cities in the USA or the world and give relative locations in a game with each other.

Have the students determine locations of areas about which they are studying in relation to other reference points.

Specific Location:

Have the students use longitudes and latitudes to locate on maps, atlases, or wall maps locations which are important to them, such as places in which they have lived, birthplaces, places they have traveled, locales of stories being read.

Have students locate by latitude and longitude on a world map places of current news and world trouble spots.

Have the students give each other latitudes and longitudes of places without the cities' names and see if they can determine the specific cities.

Scale and Distance:

Introduce the students to scale by showing them various maps with scales on them. Then show different maps and let the students find the scales. Next have them measure simple distances by placing an edge of a paper between points on a map. Have them mark the two points on the paper and lay the edge along the scale to find the distance in miles.

Have the students calculate distances between varying points in Texas using highway maps.

Have the students measure distances of classroom interest (birthplaces, vacation spots) on several types of maps with varying scales and see if they are about the same.

Use travel stories to make the map show the nearness of people. Have the students correspond with schools in foreign countries and locate them on the map. Then have the students plot their distances by the routes they would like to use to get there.

Use polar maps and the globe to let students determine the shortest routes from some city in the United States to others in Northern Europe, China, Japan, and Russia. Let them use the globe's scale. Next have them decide the route on a flat map (Mercator projection) and then let them go back to the globe and check out the map route so that they can understand the great circle routes (arcs on a plane that bisects the earth).

Symbols:

Have the students make charts showing pictorially the meaning of various map symbols and explain them to the class.

Play a game with a complex map to see who can get the most symbols from the map without a key.

Have the students use a topographic map to build the landscape with clay.

Have the students make a contour map using aerial photographs as their guide.

Have the students list some cultural features on the landscape, such as buildings, bridges, roads, parks, man-made lakes (not natural ones), large monuments (sphinxes and pyramids) and some physical features (rivers, hills) and make up symbols for those for which no standard ones are given.

Have the students examine maps that use different symbols for the same features so that they will see the necessity of checking the legend for each map they use.

Have the students create a map and its symbols and tell about the place or write a story using the map.

Comparisons:

Have the students compare maps showing river systems with maps of the locations of cities to determine if water seems to be a major factor in the location of cities.

Have the students compare climate maps with landform maps and population maps to see if the first two are significant in the location of population clusters.

Compare mining region maps to industry location maps and maps of transportation systems and let the students determine their significance.

Let the students decide what types of maps they would like to compare of an area being studied to help them understand, at least to some degree, why things are located where they are.

Summary Activities:

Have students draw maps of the school, neighborhood, or community using the essentials of a good map. The complexity will depend on the level of each student.

Have the students make maps of the local area, being certain to identify reference points.

Have each student draw free hand a map of an area being studied and make a set of symbols, scale, etc., for it.

Have the students use a highway map to plan a trip which enables them to practice the basic skills. Have them mark the routes, make stops at points of interest, and discuss what has been learned.

Have the class make a model village with block houses (game pieces are fine), masking tape streets, blue construction paper lakes or bottle tops filled with colored water, and clay mountains. Then have the children map the village, keeping their skills, essentials, and qualities in mind.

## Problem Set C

### Problems

- What can maps do that pictures and globes cannot do?
- What can pictures and globes do that maps cannot do?

### Generalizations and Understandings

Maps, globes, pictures and books are all tools for learning.

Each has its own strengths, weaknesses, and limitations.

When used together, maps, globes, pictures and books increase one's knowledge and broaden one's understanding of an area of the world.

### Concepts

maps
globes
pictures
books
descriptive ideas
interpretive ideas

## Tools and Resources

Globes, various maps, pictures of places, books about places.

## Methods of Approach

Discuss with the students the difference between descriptive ideas and interpretive ideas. Give examples of each from the resources listed above.

## Activities

Have the students get two or three tools for learning for a specific area of the world and identify some of the descriptive and interpretive ideas they present.

Have the students decide what learning tools besides maps, globes, pictures, and books would help them find out about the world (such as people, clothing, etc.).

Have the students discuss how trips can be learning tools and how maps, globes, pictures, and books can help make a trip more of a learning experience.

Have the students collect maps, pictures, and written descriptions of an area nearby. Have them study the tools and then take a field trip to the area. When they return to class, have them discuss things which they learned about the area on the trip which they did not find out from the maps, pictures, or books.

In a class discussion, let the students decide the strengths, weaknesses, and limitations of maps, globes, pictures and books or what they can or cannot do.

# UNIT III

# Climate and Man

## UNIT III
## CLIMATE AND MAN

### Problem Set A

Problems

- What is weather?
- What causes precipitation and weather changes?

Generalizations and Understandings

Weather is the state of the atmosphere at any given time with respect to temperature, humidity, precipitation, pressure, and winds.

Precipitation is caused by a cooling of air with a relatively high percentage of humidity.

There are three major ways to cool the air: orographic (air rising up mountains), convectional (cyclonic or wind currents within an air mass), and frontal (warm air rising over a mass of cool air).

Fronts are usually classified by their areas of origin, such as polar, continental, maritime, and tropical, and by their temperatures--such as cool, cold, or warm.

Weather changes are usually brought about by orographic, convectional, or frontal conditions and by the seasons of the year. (Review seasons in Unit I.)

Concepts

| | | |
|---|---|---|
| weather | humidity | orographic rainfall |
| atmosphere | temperature | convectional rainfall |
| precipitation | pressure | frontal rainfall |
| wind | seasons | front |

## Tools and Resources

Weather maps; pictures of cloud formations; thermometers; barometers; humidity, rainfall and wind gauges; materials for creative activities.

## Methods of Approach

Show pictures of clouds and rain and ask the students why it rains. Let them then collect pictures of rain and clouds. Discuss the causes of rain.

## Activities

Have students write a story about a cubic foot of air.

Correlate with math and have the students note the temperatures for an area and make a graph.

Use a sponge as a cubic foot of air and fill it with water as cool air until it cannot hold any more and drips. Have students explain what happens as air cools.

Bring in a barometer and show the class how to read it and distinguish between highs and lows. Let the students keep a chart or graph of daily readings and compare the variations with what is happening outside.

Show an experiment using ice and water in a glass and watch the droplets form on the outside of the glass as water vapor in the air condenses.

Make clouds with the science table apparatus and show the condensation of steam.

Use demonstrations of hot and cold, condensation and the like on glasses.

Have students make a bulletin board of various weather devices and their uses.

Let the pupils write a brief paragraph on what is going on outside the window each day for a period of time. Let them put their findings on charts.

Have students keep records of local weather long enough to make generalizations. Then have them check them with the weather bureau to see if they are close. Point out that there will be local variations.

Have the students observe and write a description of the day a cold front moves in and compare it to the day before and the day after.

Describe the conditions of a cold front moving in and have the students observe one in your area. Then have the pupils act out a cold front and a warm front in creative dramatics.

Have the students write a play, "Where the Action Is," about a cold front meeting a warm front.

Have the students make drawings to illustrate a story about the meeting of two fronts and the results.

Have the students write a description of a cold front moving in and make a diagram to go with it.

Have the students write the diary of a raindrop as it goes through the water cycle.

Visit a weather bureau and acquire maps on weather. Let the students play "weatherman" and give reports each day.

Have the students make a scrapbook of clippings on the weather from local, area, or distant daily newspapers and compare the weather in these regions to that in other parts of the United States or the world.

Have the students report on how the TV weather forecasts compare to actual happenings. Let them decide what caused the rain.

Let the students take a field trip to the local TV station to see how the weather report is made up for TV viewing.

Have pupils role-play TV meteorologists using and describing maps they have made.

Bring in a resource person, such as a professional pilot or a building contractor, and have him explain the influence of the weather on his work.

If there is a river nearby, let the students examine it to see if it has any seasonal fluctuations which might be attributed to the weather.

## Problem Set B

### Problems

- What is climate?
- Why are there variations in climate?
- How are climates classified?

### Generalizations and Understandings

Climate is the average condition of weather, usually for a year, derived from observations over a period of years.

Though all climates have the elements of wind, temperature, humidity, pressure, and precipitation, the controls of latitude, elevation, mountain barriers, ocean currents, wind and storm systems, land masses, and water bodies cause variations in climates.

There are several ways to classify climates but one of the most common systems includes the following: tropical rain forest, savanna, steppe, desert, humid subtropical, Mediterranean, Marine West Coast, humid continental, taiga, tundra, ice cap, and undifferentiated highlands.

### Concepts

| | | |
|---|---|---|
| climate | wind and storm systems | tundra |
| latitude | tropical rainforest | Mediterranean |
| elevation | humid subtropical | Marine West Coast |
| land mass | savanna | humid continental |
| water body | desert | ice cap |
| mountain barriers | steppe | undifferentiated highlands |
| ocean currents | taiga | climograph |

### Tools and Resources

Atlases, almanacs; wall maps with wind and ocean currents and mountain barriers; charts of climatic regions, climate controls, climographs; and materials for creative activities.

## Methods of Approach

Assemble a collage of pictures representing various types of climates. Let the pupils try to guess where they are found and ask them if they have any idea why certain areas differ in climate.

## Activities

Make a study of which controls exert the most influence on the climate of selected areas.

Have students make posters showing the influence of landscape on air masses.

Have the students make a large chart showing how the sun's rays pass through a thicker layer of atmosphere at the poles than elsewhere. Have them decide what influence this has on climate.

Use fans to make wind currents and have the students explain what they are.

Show the wind currents on a large map and decide where your local ones fit in.

Have the students act out each of the controls and elements of climate in creative dramatics.

Have students draw pictures and explain the seven climate controls given that act on the elements that cause climate.

Have the students write riddles about climate controls.

Make a sawdust and white glue map (better than salt maps) showing some of the controls that affect climate.

Describe the situation when a cold front moves into a warm front. Often this happens during a school day and would be more meaningful if the activity coincided with the front. This is also where an analysis of the area and the controls causing climate could be utilized.

Have the students write a skit using climatic controls as principal characters and have each character act out his effect on climate.

Let the students draw maps of an imaginary land mass and put in climatic controls. Then have them identify the correct climate and vegetation for the land mass.

Have students surmise from a map what the climate is like, how much rain may fall, and how long the growing season is.

Make models to demonstrate the influences of landscapes on air masses.

Make a climograph of your town and one of a city in another part of the world at the same latitude. Compare them and discuss the controls that make them different. Decide what kinds of climates they are.

Let the pupils make a booklet with sections for each kind of climate. On the cover have a world map showing climatic regions.

Have the students collect pictures of various types of weather conditions and climates, label them, and explain why they exist.

Have students investigate the climate of Ecuador and determine why its climate is as it is.

Let the students study a Texas map and decide why special kinds of climate and weather prevail.

Have students who have lived or traveled in other parts of the United States or the world bring slides of the areas and discuss the climate and weather.

Have students pair off and discuss weather and climate to each other until they both agree that the other one understands the comparison.

## Problem Set C

Problems

- How do climate and weather influence man's life in an area?
- What hazards do they hold for man and what precautions does he take to protect himself from them?
- How has man modified aspects of climate and weather?

## Generalizations and Understandings

As climate and weather vary, so do many aspects of man's life, such as foods, clothing, shelter, sports, and certain economic activities.

Climate and weather hold many hazards for man, including such things as hurricanes, tornados, typhoons, torrential rains, storms, a climate which allows disease-bearing insects to flourish, blizzards, dust and sand storms, droughts, heat waves, monsoons, glazing (ice and sleet), hail, tidal waves, volcanic dust, frostbite, snowblindness, whiteouts (in snow storms), avalanches, mudslides, floods, sunburn, electrical storms, and northers.

Man modifies and adapts to his climate and weather by using such things as fire and heat, dehumidifiers, air conditioning, rain cloud seeding, irrigation, plant cover, storm cellars, sun tan lotion, insulating material, protective clothing, green houses and cold frames, hybrid plants and animals, atomic and solar heat and power, and warning systems of pending weather dangers--such as radio, TV, newspapers, and birds.

Man's understanding of climate and weather has been a continual growth from primitive man's superstitions to modern man's technology.

## Concepts

modification
isohyets
adaptation
growing season
climate and weather hazards

## Tools and Resources

Pictures of dangerous weather conditions and of adaptation and modification of climate and weather, including those of technology at work; pictures and stories of man's changing attitudes toward the elements through the ages; thermometers, world maps, and resource people.

## Methods of Approach

Put a thermometer on the inside of the classroom and one right outside the window. Record the temperatures, note the differences and use as an introduction to a study of how man changes his weather conditions or adapts to them.

Show pictures of hazardous weather conditions and let the students determine why they are.

Activities

Cover a large world map with pictures of climates, clothing, kinds of houses, and foods of various areas and discuss how they are related.

Have pupils discuss, collect pictures of, or write reports on the various ways people around the world keep warm or cool.

Have the students make a bulletin board showing homes in different climates of the world and another one of foods from different parts of the world.

Have students study how climate affects life in their town: crops, water supply, industry, automobile accidents, education (such as when they go to school), sports, land uses, and types of retail products--such as certain foods and clothing.

If some students suffer from hay fever, have them discuss what part climate plays in their allergies and where they could perhaps go to avoid them.

When students discuss current events, discuss in what kind of climate each takes place and how the climate helps or hinders the event.

Have the students compare the vegetation of two areas of the world and then decide the climates of the two areas and explain how the climate influences vegetation and the vegetation reflects the climate.

Have students collect pictures showing the growing season of an area, its crops and activities that are influenced by its climate.

Compare old homes with new homes in an area and see how they are adapted to the climate of your town and what problems they might have. Compare them to homes in other parts of town.

Invite the county agent to speak to the class about new plants or animals which have been introduced into an area and what adaptations these had to make to the climate.

Make cyclones by stirring water, detergent, and food coloring, or by using an electric fan and feathers.

Make a hurricane eye in a blender.

Justify the location of Brazilia climatically.

Compare your town to one in another part of the world with a similar climate. Study the way of life in each and try to decide how and why they differ.

Invite a resource person to talk to the students about the effects of weather on war strategy, such as problems which the monsoon season presents in Viet Nam.

Chart a plane trip in various kinds of weather conditions and change forms of travel if the need arises.

Have a highway patrolman or a local police officer talk to the class on the problems of weather while driving and some precautions one can take.

Have the students list ways in which man can modify his weather.

Divide the class into several groups. Let each group select a different city in the State, Nation or world. Then have each group select one member as a commentator and present a short news and weather report for his city at that time of year. Or each member may present one part. The group should prepare maps and charts as needed to present the news and weather.

Study a comparison of two cities in which the students are interested. Then have them decide what one would need to pack in a suitcase for each place during a specific time of year. Remind them that one must consider not only the climate and the weather but also one's activities.

Have the students write an imaginary story about a trip around the world, choosing their route and telling of the expected climate and actual weather they found.

After you have studied your town's climate, have the students pretend that you moved it somewhere else, such as to the south shore of the Hudson Bay. Then have the students decide what would happen, what changes would have to be made in activities and dress, what could remain the same and how it would affect the culture. Then study a city in some other part of the world and place it in your area and discuss what might happen.

Trace the history of the development of man's concepts or beliefs about the elements, especially the rain.

Have students research fables and superstitions concerning weather and its effects on man. Have students decide the facts or fictions of them and tell why.

Let the students collect old sayings about the weather and see if they can find out whether they are true.

# UNIT IV

# The Face of the Earth

## UNIT IV
## THE FACE OF THE EARTH

### Problem Set A

Problems

- What is the earth's crust?
- Of what is the earth's crust composed?

Generalizations and Understandings

The earth is a sphere made up of layers and the outside covering is known as the earth's crust.

The earth's crust is made up of sedimentary rocks, igneous rocks, metamorphic rocks, and consolidated and unconsolidated materials.

Concepts

earth's crust
sedimentary rocks
igneous rocks
metamorphic rocks
consolidated and unconsolidated material

Tools and Resources

Apple, sedimentary rock, metamorphic rock, igneous rock, consolidated and unconsolidated material, and a resource person.

Methods of Approach

Bake an apple in the school cafeteria oven or a portable Dutch oven and bring it out steaming hot to the class. Allow it to cool during class and let the students record the changes in its skin as it cools. Point out the cracks and various levels of elevation of the baked, cooling peeling. Let the students discuss how this compares with the earth.

## Activities

Let the students collect rocks and determine which types of rocks they are. They should also include from where they came if possible. If one of the major types cannot be found, let the students determine on a geological map where they are found and write to the Chamber of Commerce or a school in the area and ask for a sample. If to a school, an offer to exchange rocks from your area would be a thoughtful gesture.

Let the students invite a resource person from their area to discuss the types of rocks and land forms of the area. Such a person could be an agricultural agent, a local "rock hound," a geologist, a highway engineer, a building contractor, a city engineer, a natural science center person, or a county surveyor.

# Problem Set B

## Problems

- What are the major land forms of the world?
- What are the patterns of major land forms?

## Generalizations and Understandings

The earth's crust is found in major forms: mountains and valleys, hills, plateaus, basins and plains.

These land forms are scattered throughout the earth in logical patterns.

## Concepts

mountains
valleys
hills
plateaus
basins
plains
relief

## Tools and Resources

Topographic maps of different land form areas, other types of land form maps, atlases, large pictures of land forms, highway map.

## Methods of Approach

Place large pictures of various land forms on the bulletin board. Ask students to identify them and to compare and contrast the pictured landscapes for likenesses and differences.

Show maps of mountain and basin systems of the world and let the students decide on the patterns.

## Activities

Let the students, on separate world maps, mark the major land forms of the world so that they can see the patterns of each and draw some generalizations about these patterns. Then, if they wish to put them all on one large world map and determine some relationships, they can do so. For example, where are major plains usually located in relation to "new" mountains.

Let the students choose countries or states that interest them. and by using maps, determine the major land forms in the region. then check them with a book about the region to see if they are right in their interpretation.

Let the students take several different maps of an area printed by different companies and compare them to see if they all agree on the location of major land forms. (Usually they do, although they sometimes vary on minor land forms and river courses. Poland is sometimes a good one to use to see if the map includes any remnants of the Carpathian mountains. Besides strengthening the pupils' skills in map reading, this activity will let the students see that not all maps on the same topic agree and that maps are subject to human error like everything else.)

Let the students make a "vocabulary" list of land forms (the major ones and perhaps minor ones in which they are interested) and illustrate them with pictures and drawings.

Let the students take a highway map of a region being studied and plot the shortest or most scenic route they could take to visit all the major land forms of the region.

Let the students divide into interest groups, each taking one land form type in a specific region of the world. Let them look for other evidence or clues to land form, such as wildlife types associated with certain land forms; vegetation; types of houses; clothing; dams (There must be some place to collect water.); or climate.

## Problem Set C

### Problems

- Why are land forms found where they are?
- Why do land forms change?

### Generalizations and Understandings

Land forms are produced and located by logical processes of change.

Land forms change by processes from within the earth (diastrophism and volcanism) and processes on the surface of the earth (erosion, deposition, and man).

### Concepts

diastrophism
volcanism
erosion
weathering
deposition
fjords
glaciers

### Tools and Resources

Atlases, various maps and pictures of the same area, pictures of various river courses throughout the world, pictures of fjords.

### Methods of Approach

Show the students pictures of various rivers and let them determine how the rivers are changing the land.

Let the students contrast the valleys of glaciers (rivers of ice) with those of rivers. Then let them discuss other ways the rivers and glaciers affect the land.

### Activities

Let the students study a land form map and determine if the courses of rivers and streams and the location of lakes are in any way influenced

by each other. (Rivers flow downhill and take the line of least resistance and change--erode or deposit--the landscape as they go.)

Let the students compare land form maps and precipitation maps to see what conclusions they can draw on the location of major rivers in the world; i.e., why rivers start where they do and go where they go. (Rivers must have some source of water and flow downhill and take the line of least resistance until they can wear away a "better" path.)

Let the students determine from land form maps why many major rivers flow northward instead of southward, such as the Nile and most of the rivers of Siberia.

Let the students study pictures of horizon lines and decide what horizons tell about land forms. For example, if one studies the horizons of the Texas Hill Country, he can easily see that the horizon lines of all the hills are about the same level, indicating that the region was originally a plateau that water (primarily) has dissected (cut or eroded) into hills.

Have the students chart the two major earthquake belts on a world map. (One coincides with the "ring of fire" around the edge of the Pacific because there are so many volcanos in the region; and the other earthquake belt more or less follows the equator.) Then let the students compare their earthquake maps to the maps of major mountain chains. Have them find out if these are primarily "new" mountains which are still rising or old ones which are being worn down. Then let the students discuss why it is logical that the "new" mountain regions are the primary areas of earthquake activities (though not the only areas).

Let the students discuss and collect pictures or drawings of how earthquakes change the face of the earth. A study of the San Francisco earthquake, the Alaska earthquake, or the Venezuelan or Ecuadorean earthquakes of a few years ago would be interesting.

Let the students collect pictures or make drawings of various types of erosion, such as erosion caused by wind, water, melting ice and gravity (avalanches show this type dramatically).

Let the students compare land form, climate, and vegetation maps of the same area and see if there is any correlation among them.

Point out to the students that the forces which change the face of the earth may be classified in other ways than those mentioned to the teacher in Dr. Kennamer's tape. Another classification is those forces which tear down--such as the various forms of erosion--and those which build up, such as stream deposition. Let the students decide what some other ways are.

## Problem Set D

### Problems

- Why does the same land form in different parts of the world vary in appearance? (That is, why do all mountains not look exactly alike?)
- How do climate and culture influence the various uses of the same land form in different parts of the world?

### Generalizations and Understandings

Climate and the processes of change affect the appearance of the same land form type in different parts of the world.

Differing uses of the same land form are caused by climatic and cultural differences in varying parts of the world.

### Concepts

relationship
interaction
polder
culture
climate

### Tools and Resources

Atlases, geographies, books on peoples of other places, various types of maps, pictures of rivers and types of erosion.

### Methods of Approach

Let the students study pictures of various land forms and determine the assets and liabilities for various kinds of activities (industrial to nomadic).

### Activities

Let the students choose one major land form for the class to study and then divide into groups to study the land form as it is found in different parts of the world. Then let them find out how climate and culture influence the various uses of the same land form in different parts of the world.

Let the students divide into four groups and decide through study what the problems of their major land forms are for human use and how these are being overcome.

Let the students study ways by which man changes land forms--such as in Holland when the Zuider Zee was drained to form land, the polders being built in Florida, hills leveled in road building and deposition in reservoirs of dams.

Let the students chart on a map areas which are dedicated to research (e.g. White Sands, New Mexico, or Antarctica) and determine why they were chosen and whether land forms played any part in the choices.

# UNIT V

# Resources, Man, and His Environment

## UNIT V
## RESOURCES, MAN, AND HIS ENVIRONMENT

### Problem Set A

Problems

- What are resources?
- How are they used and abused?
- How can man become aware of the many faces of resources so that he can use what he needs but conserve what he does not need?

Generalizations and Understandings

Resources are determined by a group's cultural and technological development.

Resources are abused and misused by the forces of nature and by man's carelessness, ignorance, and greed.

Resources for the use of each person are related to his individual desires but are also a personal responsibility because natural resources have their limitations in quantity and quality.

Concepts

| | | |
|---|---|---|
| resources | soil | wildlife |
| quality | air | land |
| quantity | minerals | forests |
| water | | |

Tools and Resources

Resource people, maps, flashlight and erasers, samples of resources, pictures, almanacs, books on peoples and resources.

Methods of Approach

Present pictures of people at work in the United States. Let the students determine what resources they are using. Include the six areas of man's environment:

- Beyond the earth: air, etc.
- The earth: soil, water, and mineral
- Living things: plants and animals
- Conditions necessary for life
- Physical and chemical forces
- Man's applications

Then present pictures of peoples around the world using resources and let pupils decide what resources they are employing.

Activities:

Let the students keep a scrapbook of clippings from newspapers and magazines on water news at home, in Texas, in the United States, and around the world.

Let the students draw the water cycle, then pair off and explain it to each other. Next let them apply the cycle to their local area and decide what parts of it are most evident in their locale.

Let the pupils collect pictures of ways water is used and ways it is abused or misused. Bring out quality and quantity characteristics.

Invite a resource person, such as someone from the water board, to discuss with the students water pollution, including such types as thermal pollution, detergent pollution, insecticide pollution, sewer pollution, and others.

Let the students do a research project on what happens when a warm water current called "El Niño" invades the cold water current, "The Humbolt," in South America every ten or twenty years, so that students can understand some of the problems of heated water coming into cooler water areas as sometimes happens when industry uses water in such things as its cooling system and then dumps the warm water into a stream (thermal pollution).

Have pupils discuss ways they and others pollute water and let them keep a diary for a week on what they did both with and to water. Point out that, so far, water cannot be cleansed of detergents; so any use of them constitutes a pollution.

Let the children hold their breath to find out the importance of air to man. Darken the room and have the students shine a flashlight or slide projector light. Then have them note the particles in the air. To make it more noticeable, let the students hit two used erasers together in front of the light source.

Let the pupils check in the local newspaper, at the weather bureau (now called "Environmental Science Service Administration"), or a large Texas city newspaper to get the daily pollen count for an area. Let the students decide whether their area has a pollen problem. Is there a seasonal problem?

Invite the school nurse, a local doctor, or other resource person to talk to the class on the harmful effects of air pollution.

Have the students collect and discuss pictures of various ways air is polluted or the objects which pollute, such as cars, trucks, industrial smoke stacks, fireplaces, cigarettes, cigars, pipes, trees and flowers, airplanes, trains, city dumps, open sewers, pesticides and herbicides, incense, fumes of various sorts, and outdoor trash burning. Let the students discuss some of the air pollutions they enjoy, such as a wood fire in the fireplace.

Let the students map the major wildlife refuges and write an essay with drawings on the value of them.

Let the students find out the native animals of an area and look at them today to find out if they are still there, if there are as many as in other decades, and if they are protected, and the like.

Let the students go to the grocery store and list the various types of fish there, noting where they were packed. Point out to the students that many of the fish were not packed where they were caught. Then have the students locate on maps major fishing areas of the world and find out how these are being damaged, destroyed, or preserved.

Have the students decide what objects in the classroom utilize minerals and show them pictures of minerals being extracted by mining, drilling, dredging, and extracting from sea water. Then let them research abuses from such mining techniques.

Let the pupils set up a display area of various ores and petroleum and get samples of common products which use them.

Let students map areas of the world where forests are important to the lives of the people living there. Have them find out if all the forests are the same. If not (and they will not be), have the students divide into groups, each group taking a different region, and find out what kind of forest the region has and what kind of use is made of the forest. In some cases the use may be an indirect one, such as the home of valuable animals off whom the people live. Let them then write to the forest and parks departments for information on forest abuses.

Let the students study their neighborhood on a walking field trip with an agricultural or farm agent or other knowledgeable person to note the trees in the area which are not native or which were purposely planted in the area. Have the students decide why they were planted (beauty, shade, windbreaks, prevention of erosion, etc.) and what problems they had or adaptations they have made to the area.

Let the students collect pictures of various soil and land uses and explain each. These will include such things as agriculture and ranching, gardening, highways, and housing developments.

Invite a soil conservationist or other resource person from the county agriculture office to tell the class about problems which soils face from man and nature and the problems which soils face in your area.

Let the students make simple maps of some local area, determine the soil type, put in the soil uses and explain them. If one of the students likes to take pictures, let him illustrate the map with slides or photographs. Otherwise, let the students draw pictures of the local uses.

Have the students collect pictures of soil erosion and decide what the causes were--such as water, wind, lack of ground cover, overgrazing, actions of man, and the like.

Invite an engineer from the Texas Highway Department to tell the class about problems of soils in road building in Texas. These problems are especially dramatic in the Blacklands.

Have the students take a walking tour of the school grounds after a rain and look for the evidences of erosion. These may be only in the form of small erosion rivulets, but they will be present.

If the class is studying Latin America, have the students look at the "Banana Republics" and find out what problems they face, such as soil rot and disease.

Let pupils make a study of some civilizations which geographers and historians feel vanished or declined because of soil and land problems (such as ancient Mesopotamia, rainforest groups, Bruges, and others).

Let the students draw a chart of resource abuses which they find in the local area.

Have the students give a TV-type presentation, using maps, drawings, pictures and the like, on resources, their uses and abuses, and disasters involving them around the world.

## Problem Set B

### Problems

- Why should people everywhere be concerned with the proper handling of resources?
- How can resources be preserved, conserved, and restored?

### Generalizations and Understandings

Man needs his resources for survival.

Time, space, and change are continually affecting the status of resources.

Man can ruin his environment and hurt his living standard through the mismanagement of his resources.

Environment is part of one's inheritance.

Proper environmental management includes the wise use of resources.

### Concepts

| | | |
|---|---|---|
| conservation | human welfare | beneficiation |
| preservation | personal welfare | substitution |
| restoration | group welfare | inventory |
| prevention | cooperation | |

### Tools and Resources

Resource people, maps, books of other peoples, publications from conservation and resources organizations and agencies, almanacs, maps.

## Methods of Approach

Present people from the different areas of resources to discuss with the class the present state of their resources and to project into the future the possible conditions of the resources for the individual student as he takes his place in society. If outside people are not available, the class can divide into groups and make this projection themselves, stressing that the future is determined by the people.

With the students, list on a chart the resources of the local setting, the State, Nation, and world. List the conservation measures observed and the condition of resources inherited from the past.

## Activities

Have the students discuss, "What is smog?" If you are not in a smog area, let the students report on the causes of smog and what Los Angeles is doing to try to lessen the problem. Otherwise, let the pupils find out, perhaps through a resource person from City Hall, what your town is doing to curb the problem.

Invite an oil company or other resource person to explain to the students what conservation and antipollution methods his company is using and some of the problems involved in the industry. In addition, try to get someone with the Texas Railroad Commission to explain some of their regulations and procedures for enforcing conservation measures.

Take the students on a field trip to find out where local water comes from, what impurities the water has, and how it is purified.

Let the students discuss water dangers in nature and tell of any experiences that they have had with such dangers. Let them propose some precautions which would involve group cooperation, such as flood control.

Invite a forest ranger, someone from an agriculture department in a college, someone from the National Parks System or someone from the Texas Parks and Wildlife Department to talk to the students about forest conservation. If no resource people are available, let the students write to the American Forest Association, the U.S. Department of Agriculture, the American Forest Products Industries, Inc., and the Boy Scouts of America for information.

Invite a local farmer to tell the class what soil depletion is, what causes it, and what measures he takes to avoid it.

Let pupils collect pictures and news items related to each kind of resource and its conservation, restoration, or preservation and abuses.

Divide the class into groups of four and let each group study other people who do not have the same culture or technology as we. Let them determine the resources for the people, how they use them, and what abuses or conservation methods they practice.

Let the students write a story in which the main character (or group of people) meets the problem of a lack of some vital resource, necessary for the fulfillment of his life's plan and the attempt to overcome this dilemma.

Let the students study great heros of conservation or the history of the development of conservation in the United States and around the world.

Let the students draw up a political party platform for the preservation of the natural environment in certain areas, conservation programs, and the wise use of nonreplaceable resources. Point out the international implications of some of these.

Let students divide into three groups: one to be an industrial pollutor, mineral extractor or lumber-paper mill group; another to be those living downstream or close by or members of the Sierra (conservation) Club, the Audubon Society, or National Wildlife Federation; and the third group to be the arbitration board. Let each side present his case for the resource misuse, call in witnesses, use maps, pictures, articles, statistics, financial problems, critical needs for their activities and the like. Then let the arbitration board decide what protective measures can be taken in light of time, cost, need, and so forth. Point out to the students who are arbitrating that there is more than one side to a question and that they must keep this in mind when arriving at a conclusion.

Let the students create a board game with various resource problems along the way and with cards to draw for disaster or pollution or poor conservation methods to set them back, the goal being a healthy, lovely town for a win.

Let the students collect or draw conservation slogans, symbols, mascots, names of organizations, and create their own.

Present the six facets of a person's life--political, economic, religious, social, intellectual, and aesthetical--and have the students discuss how conservation can affect these.

# UNIT VI

# Urban Man

## UNIT VI
## URBAN MAN

### Problem Set A

Problems

- What are cities?
- How can towns and cities be classified by size?
- On what kinds of sites have cities located?

Generalizations and Understandings

A city is a compactly settled area which is a territorial, political, economic, and social unit.

Population settlements can be classified by size, such as home, hamlet, village, town, city, metropolis, magalopolis, and ecumenopolis.

Cities are usually located where there are various types of water sites, where one form of transportation meets another (either alike or different), where goods are unloaded and loaded to another form of transportation (breaking of bulk), or at the intersection of trade and migration routes.

Concepts

| | | |
|---|---|---|
| home | metropolis | crossroads |
| hamlet | megalopolis | breaking bulk |
| village | town | accessibility |
| city | ecumenopolis | site |

Resources and Tools

Slides, pictures, films, aerial photographs of various cities, State map, geographical dictionary, atlas, other reference material.

## Methods of Approach

Show slides, pictures, or a film of various cities and let the students formulate their own definition of a city.

Show aerial photographs or drawings of a few major cities and let the students decide what types of settings the city was built upon. Such cities could include Denver, Houston, Seattle, Paris, Sheffield (England), Santa Fe, Baghdad, Kinshasa (Leopoldville), Soochow (China), New Delhi (India), and Buenos Aires (Argentina).

## Activities

Introduce to the students, by means of pictures and maps, the classification of cities by size. Then let the students find out the population of their own town and decide what its classification is according to the size.

Using a Texas map, let the students pick out examples of as many classifications as possible and explain why they could not find examples of the others.

Let the students, working in pairs, pick five towns or cities in Texas; tell where they are on the map; and tell something about the site which the map shows, such as a major river, nearness to the coast, central locations in the State, a major highway, or convergence of two roads.

Give each pair of students the names of five towns or cities around the world. Let them locate each in an atlas; find out their size from the atlas, world almanac, geographical dictionary, or other reference materials; and classify the towns by size. Then let the students, using various types of atlas maps, describe the setting, and decide why each site was chosen.

Draw hypothetical maps of places which have various types of settings, such as crossroads, various types of transportation, water sites, and mountains, or any combination. Then let the students, working in pairs, decide where on the maps they would like to locate towns and tell why. As long as the students have a reason, no answer should be considered wrong. If there is no water on the map, ask the students what they are going to do about it. (They may have to abandon it if they decide there is no feasible way to get the water from wells or from somewhere.)

Problem Set B

## Problems

- What is the "situation" of a city and how does it differ from its site?
- How can a site influence the patterns of development of a city?
- How does the "situation" influence the city and the city influence the "situation"?
- How can a city's influence be determined?

## Generalizations and Understandings

The "situation" of a city or town is its position in relation to other places and to its hinterland or surroundings.

The "site" is the specific location of a city--the actual physical space which it occupies.

The physical development of a city is influenced by its site. The site may also influence economic, social, and political patterns and activities.

A city may both influence and be influenced by its situation in economic, social, and political activities.

A city's influence can be determined in many ways, such as newspaper circulation, distances which people are willing to go for its services, and the distribution of its goods.

## Concepts

situation
hinterland
resource
influence
accessibility

## Tools and Resources

City maps; road maps; maps of countries, continents, or the world; old telephone books; Texas Almanac; atlases; geographies; social studies books.

## Methods of Approach

Show the students a series of city street maps and then a map of the United States or the world with these cities on it. If possible, also get topographic maps of the cities shown. (Most atlases have both the site and situation maps for large cities, such as Chicago, San Francisco, Houston, Seattle, New York, Philadelphia, London, Paris, Copenhagen, Moscow, and Tokyo, if separate maps cannot be procured.) Give the students the name for the first town and show them the maps. Then divide the students into small groups and give each group a set of site and situation maps. Review them on the term site. Tell them that one of the maps is of the site of the city and one of the maps is of the situation of the city. Then let each group decide how the maps differ and define the word situation. Next bring all the groups back together and let each group present its definition and tell the others which map is of the site and which is of the situation.

## Activities

Let the students look at maps of their town and decide what advantages the site and situation offered when it was founded. Then let the students decide whether these are still advantages today.

Let the students, working in pairs, choose two cities around the world or in a region being studied and decide what the advantages were in the site and situation of the cities when they were founded and whether these are still apparently advantages.

Give the students a list or let them make their own list of possible site sources, such as crossroads, trading centers, railroad junctions, breaking of bulk cargo point, water sites (river mouths, head of navigation, river confluence, outside bend in a river, rapids, canal and river junctions, junction of river and land routes, fall line or an island). Let them find examples of each type of site from the atlas or other sources.

Many very old cities, especially in Europe, began as coastal cities at the mouth of a river. However, through the ages, the silting of the mouth has built the land out and these sites are now many miles from the sea. New ports have had to be built to ship goods to them. Let the students try to locate three such European cities by studying maps, reference books, and geographies.

Let the students look at the sites of cities and determine why the cities have spread in certain directions more than in others. Let them determine whether the physical environment was a factor.

Let the students check their local newsstands to see what out-of-town newspapers are for sale. This is one way of determining part of the scope of a city's situation. For example, the situation of New York City may be much larger than the situation of Waco.

Let small groups of students look at highway maps and decide what the various sizes and directions of highways have to do with the situations of cities. They can ask the map such questions as, what cities have the most highways running to them, which have the largest highways, which have the least and smallest, and what do these show? The same can be done for air transportation or the number of postal substations, etc.

By checking in the yellow pages of telephone directories (Large libraries and chain hotels may give or lend you old ones.) or in the Texas Almanac, atlases, and geography and social studies books, let the students, working in small groups or pairs, select one or two places to determine what the hinterland of a city provides the city and what the city provides the hinterland. The students probably will come up with such things as farm products, markets for certain goods, economic resources, services, recreation, etc.

## Problem Set C

### Problems

- What are the functions of a city?
- What are the patterns within towns and cities? What are the urban zones within a city's pattern and why do they develop?
- What causes cities and towns to grow or decline in population?
- As cities have developed to serve man, how have they also become a menace to man?

### Generalizations and Understandings

Cities have many f nctions to meet man's needs. (Some of these include commercial and trade centers, industry and manufacturing, transportation centers, political centers, recreational centers, mining towns, educational centers, diversified trade and manufacturing, and others, such as military, religious, or medical centers.)

A city is classified by function according to its dominant activity or activities. This can be determined by finding out where most of the people work or get most of the income for the town.

The patterns of cities and towns vary and no two are exactly alike, but they can be roughly analyzed by determining the central business district (CBD) and the way in which the town grew out from it.

Zones within a city are areas in which most of the land is used in a like manner, such as wholesale warehouses, old residential property, retail stores, college campus, political buildings such as the court house, etc.

Cities and towns grow or decline primarily because of their ability or inability to collect and store food; to develop trade; to be near fertile land or on transportation routes, at sources of power beyond human muscle, or at some other valuable resource to maintain an adequate water supply; and to protect their populations.

Cities offer man opportunities and advantages, detriments and disadvantages. Some of the obvious ones include more opportunities in jobs, more cultural and sports activities, coupled with higher crime rates, crowding and smog.

As man solves one problem, he often creates new ones.

## Concepts

function
menace
wholesale
financial
CBD
diversified
commerce
suburban
trade
political
pattern
zones
urban
retail
rural
service occupations
concentric
educational
industry
advantage
processing
industries
residential
recreational
manufacturing
disadvantage

## Tools and Resources

Yellow pages of the local phone book, reference books, geographies and history books, city maps of your town, colored pencils or crayons, population statistics, precipitation map of Texas.

## Methods of Approach

Let the students look at the yellow pages and decide some of the functions of their town or city. Guide them in putting these into large categories, such as retail businesses (drug stores, grocery stores), recreation (movie theaters, skating rinks), manufacturing and industry (pottery-

making, processing of agricultural products). Then let the students agree on a classification by primary function(s) for their city.

Activities

Let the students list functions of a city (the classification which this unit gives is by no means the only one nor is it complete). Then, working in pairs, they should find examples of each type of city or town in the world and report back to the class, telling the function, the town, why they think it fits such a classification, and sources of information, including people ("Dad said that he was at Mecca and that..."). Several groups may have some of the same places classified in the same way and for the same reasons. Some may have the same places classified differently. However, if their reasons are logical for the information they have available, they should not be marked off. Even experts often disagree on classifications.

Let students, working in pairs, select a town or city that interests them, study its functions, classify it, and report back to the class.

Let the students, working in pairs, look at maps of your town. Tell the students that one part of your town is known as the CBD, or central business district. Let the students try to define it as a group and locate it on their maps (the layman's term is "downtown"). Let them decide what shape the CBD is--often in smaller towns it is linear, like a shoe-string, on both sides of one street, or rectangular around a square, or, as places grow larger, circular and several blocks deep.

Let the students, using their maps, decide on categories of land use in their town, such as residential areas, vacant areas, educational areas, etc. Let them color the areas or mark them with designs for each classification. Let them then decide what class uses the most land area. Point out to them, however, that the "most land area" does not determine a town's function, only its urban pattern.

Using the map of the previous exercise, let the students, working in groups, decide why the various land uses grew up in the areas of town where they did, and report back.

Let the students, using their city maps, going on field trips or pooling their knowledge, decide on the older and newer parts of town to determine how the town is growing. If the town is not growing, let the students determine the parts which are becoming vacant. In either case, let them decide some causes.

Let the students examine the CBD of their town and decide what types of functions are going on in the CBD. Let them determine if any of the CBD buildings are vacant. If there are any vacancies, let them find out the last type of function in the building. If the town is declining in population, let the students decide why this business stopped. If the town is growing in population, let the students determine why, still, the business is no longer there. (If it was a retail establishment, perhaps it had to compete with large chain stores that could sell at lower prices or with shopping centers which are more convenient to residential areas). If parts of the CBD were vacant but new users are moving in, let the students determine what functions the new ones have. (In large cities office buildings often replace retail businesses in the CBD.)

In a class discussion, let the students determine some of the causes of the rise or decline of cities. Let them check population statistics of several places to see if they are rising or declining. Then let the students determine why their city is growing or declining by looking at its site and situation, its ability to store food, to develop trade, its relationship to transportation facilities and major routes, and its resources, including water.

Let the class as a whole discuss the importance of water to a town or city, determine where they get their water and what their town uses it for (don't forget industry). If the area has ever had a drought or an unusually heavy rainfall or both, invite resource people to tell about such times and involve students in a discussion of their own experiences in such conditions if they remember any or those of their relatives if they have any family stories about such things.

Let the students look at population figures for Lubbock and Amarillo and decide whether they are growing or declining. Let them next look at a precipitation map of Texas for the amount of rainfall in those cities. Let them next determine where the two cities get most of their water. Finally, let the students speculate on the prospects for Lubbock and Amarillo in the future if their populations continue to grow and their water conditions remain the same. (The students may have to look at the fluctuations of the water table in that area over a period of years to see the problem.)

Let the students look at cities of the Roman Empire during its decline and decide why the cities also declined.

Let the students, working in pairs or in fours, determine, through observation of their own town, talking with adults, and reading, some of the advantages and opportunities which towns and cities offer and some of the detriments and disadvantages. Let each group report its findings (many will overlap)

and let the class discuss ways they might help to improve some of the conditions. (Litter is a problem of all places now and perhaps an anti-litter day once a month could be started in which each student would agree to carry--but not through coercion--a sack and pick up litter along the way to and from school or at least around the school area.)

Let the pupils discuss some of the problems known today in their town or in other places which their ancestors of a hundred years ago did not have in towns. Did they have similar ones (horses vs. cars)? What are we trying to do about these problems?

Let the pupils, working in pairs, select cities and towns around the world in which they are interested and find out how they were named. Then let them discuss what they think the name reflects about the "founding fathers," such as their interests, backgrounds, willingness to adapt to the new, desire to retain some of the old, mythology, religion, people whom they respected or feared, etc. Some students will undoubtedly hit upon towns whose name origins will be unknown. They should not be "punished" by forever having to seek out towns for which there is no information. Therefore, either let them write the place asking for information of its name or give them a place in the region whose name you are certain can be determined.

Finally, in a group discussion ask students why we have towns and cities and how they feel about them as a whole and about their town or city in particular after this study.

# UNIT VII

# World Regions

## UNIT VII
## WORLD REGIONS

### Problem Set A

Problems

- How can geographic knowledge get into the thinking process?
- How can the "whys" of geography be studied?

Generalizations and Understandings

Facts and concepts are utilized in developing generalizations.

By looking at the facts, concepts, and generalizations of interrelationships, distributions, and problems of areas on earth, one can at least partially understand the causes of the conditions of man and his environment.

Concepts

facts
concepts
generalizations

Tools and Resources

Sand table, pitcher of water, large rocks, transparency of South America with overlays of rainfall distribution, landforms and major rivers (at least the Magdalena, Orinoco, Amazon, and Plata), social studies books, atlases, encyclopedias and other reference materials, slides or pictures of specific rivers.

Methods of Approach

Introduce the students via slides or transparencies to specific rivers. Let them discuss some of the common features in all the pictures.

Next, pour water on a sloping sand table from the high end so that it runs down to the low end. Ask the students to tell from their observations what is needed to form a river (source of water and some place to go, e.g., earth). Ask them to decide in which direction the "river" flowed. If the students give a cardinal direction (n, s, e, w), turn the board in several directions and repeat the pouring until they come up with the idea of "downhill."

Place some large rocks in the way of the "river bed." Pour more water and ask the students to describe what the river then does. (It goes around the rocks if they are large enough, for water takes the line of least resistance or the easiest route as it flows.)

Next ask the students to tell all the facts they know about rivers in general. Then ask them under what conditions would they expect to find rivers on the earth. (They should come up with the idea that rivers will usually be found where there is an adequate source of water at the top of a "slope" and a "downhill.")

Show the students an outline map of South America. Place a rainfall overlay on it and ask the students to tell the areas of most rainfall. Then use the overlay of landforms and ask the students to decide on the high and low places (from the mountains to the coasts). Ask them to decide where they would expect to find rivers and tell why. Next, have them look at a map of South America to see if they were correct or use an overlay with the major rivers (Magdalena, Orinoco, Amazon, Plata). If they were wrong, let them decide why they made a mistake. Point out to them that any large river system is made up of many tributaries, as no water source is found just at one point for a large river.

Explain to the students the definition of facts, concepts, and generalizations and let them decide which ideas were facts, which were concepts, and which were generalizations. (There may be controversy over specific items or ideas, but that is all right.)

## Activities

Let students, working in groups of two to four, take any geographical fact or concept, see if they can find related ones in their social studies books, atlases, encyclopedias or other reference materials and form at least one logical generalization. If the students can come up with none, start them off with either some facts or concepts and let them work out the other two parts. (Some could include large cities, deserts, cotton, Chicago, Santa Fe Railroad, and air pollution.) If the students have a

difficult time getting a valid generalization, give them a related concept and stress that any generalization must be supported by specific facts. (Cluster combinations could be such things as large cities and railroads, deserts and people, cotton and climate, Chicago and Lake Michigan, air pollution and cars.) Let each group explain them to the rest of the class. It might also be interesting to let each group find one exception to their generalization so that they will realize that few generalizations are "infallible."

Give the students some geographical generalizations and let them find, working in pairs, examples or facts which seem to prove the generalizations. (Examples of generalizations: Large industries are usually located close to sources of power or raw materials. People usually adapt their dwellings to their climate and available building materials. Given a long enough period of time, if people do not practice conservation techniques (such things as wise use of resources, sanitation of some sort, antipollution), they must eventually leave an area. Governments usually regulate the use of resources within a country.

## Problem Set B

### Problems

- What is a region?
- How can the world be divided into regions?
- Why is the world divided into regions?

### Generalizations and Understandings

A region is an area of the world on a map with a line drawn around it for a purpose.

All the area in a region has some common quality or qualities that are not present to any significant degree in adjacent areas.

The world is divided into regions by social scientists to make it easier to study and understand.

### Concept

region

## Tools and Resources

Wall map, atlases, city maps, world maps

## Methods of Approach

Let the students draw a simple map of the classroom, putting in each desk or chair. Then move the boys to one part of the room and let them sit in the desks or chairs there and move the girls to another part of the room. Have the students "place" the boys and the girls on their maps, using one symbol for the girls and another for the boys. Next, let the students draw a line around the area in which either the boys or the girls are found. Tell them that the ringed area could be called a region. Ask, "In what way is the ringed area different from the rest of the map?" Then let the students come up with their own definition of region.

## Activities

Let students, using maps of their own town, map various types of regions in the area, such as commercial, agricultural, residential, or ethnic regions.

Let the students, working in groups of two or three, look at maps in atlases of various types of regions, such as landform regions, commercial fishing regions, wildlife regions, linguistic, mud house, or political regions, and discuss what they think the criteria were for marking off the region.

Pick some region of the world and mark it off on a large wall map that can be viewed by all the students. The region chosen may be a political region (country), a cultural region (Moslem world), a physical region (desert), an economic region (Common Market nations), vegetation region (jungle), or a region using some other criterion. Let the students decide on what basis it was marked off.

Let the students, working in pairs, look at vegetation maps of the world and decide where they would draw regional lines and tell why.

Let the students, working in groups of two or three, decide how they would divide up the world for study and tell why. Then let them examine some of the ways leading geographers or other social scientists have done it and compare their way to another's way, looking for similarities and differences.

Let the students, working in pairs or threes, set up any criteria they want for forming a region, draw a map with the region, and explain it to the class.

Let the students in a short class discussion or in small groups decide to their own satisfaction why geographers and other social scientists divide the world into regions for study.

## Problem Set C

### Problems

- Once a region has been drawn, what procedures may we follow to study it? What are its characteristics?
- Why are the people of a region there, what are they doing, and why are they doing it?
- How are the characteristics of a region interrelated?
- How does the region compare and contrast to a similar region?

### Generalizations and Understandings

Characteristics of a region may be understood by studying the landscape, the activities of the people, their interrelatedness and their interaction with other places.

People settle in a region for a reason. What they are doing in the region is usually logical within the context of their culture and technological level.

Characteristics of a region are usually interrelated.

Regions may be both compared and contrasted to other regions. All regions have both likenesses and differences, depending on one's criteria.

### Concepts

characteristics
environment
landscape
culture
technological level

## Tools and Resources

Atlases, reference materials, filmstrips, movies, fine arts books, music, records, tapes on the various regions to be studied.

## Methods of Approach

Let the students, working in groups of three or four, choose regions they would like to study. Then in a class discussion let them set up some of the classifications of both the physical and the cultural characteristics. Examples of the physical could be such things as vegetation, climate, soil, water resources, landforms. Cultural characteristics could be political boundaries, types of homes, religious buildings, roads, commercial buildings, fences, architecture, land division. Then let them look at their region and decide on its characteristics. Do not let the students get too many categories to study. Let the students next report back to the class and have the others look for similarities to their own regions as reports are being given and discuss these after each report. (Let each group determine how it wants to present its report.)

## Activities

Let the students, in their same groups as in the method of approach, look at maps of their region and determine where most of the people are. This can be done by looking at population maps or by looking at the locations of hamlets, towns, cities or other population centers or clusters. Then let them, through the various types of research materials and media, determine why the people settled there in the first place. If it is a place of ancient civilizations, the reason may be found only in myths or stories. If it is a place of recent settlement, like parts of Texas, the reasons may be fairly clear. Let the groups report their findings to the class, and after each report have a class discussion in which students can bring out the similarities of the settlement in their studies to those of the report. It may not be necessary for each group to give a "formal" report if they bring out their reasons in the class discussion.

Next, let the students discuss the categories of man's activities, such as agriculture, manufacturing, distribution, service, recreation, etc. Then let each group look at its region and decide which activities can be readily identified and find out what the people are doing within each of these categories. Let the students decide what influences the culture, the physical environment and the technological level have on what they are doing.

That is, let the students decide why the people are doing what they are doing in a region and justify their answer when they tell the class their findings. (Some children will not want to be the spokesmen for their group and probably should not be forced to, if they are too worried about it, for they will be contributing to the group. The groups may wish to vary their reporting techniques and not have one person standing alone.)

Let the students in their groups decide what contacts the people of their region have with others, with whom, what kind, and why. After each report, have discussion on mutual contacts, or similar ones, and possible varying reasons for them.

Let the students, in their groups, use the various media and reference materials to discover how the physical environment and the various daily activities, such as types of work, are reflected in the fine arts of the region (music, art, drama, dance). Let them present their findings in anv form, such as demonstrations, drawings, or any other way they wish.

If local media facilities are not broad enough for the study of many regions, then let the groups take one major topic each and study it in one given region, but also find its reflection in the fine arts of the region. Then let them report their findings to the class and discuss how one aspect relates to another.

Let each group find another part of the world with a similar physical landscape, compare and contrast it to their region, and decide why there are differences. In such a study it is important to note with whom each is trading, on what scale, and why.

Let the students try to find people who are from their region to invite to talk to the class. Let the speaker choose his own topic but allow time for the class to ask questions.

# UNIT VIII

# Japan: A Regional Study

## UNIT VIII
## JAPAN: A REGIONAL STUDY

### Problem Set A

Problems

- What does Japan look like?
- What is its physical and cultural landscape like?

Generalizations and Understandings

The physical environment includes all conditions of a landscape which are present before man enters, such as climate, terrain, fauna, flora.

The cultural features of a landscape include all changes and additions that man makes in the physical environment.

The landscape is the scene against the horizon or the whole of an area viewed from outside.

Concepts

physical environment
cultural features
landscape

Tools and Resources

Plaster, maps of Tokyo and Japan, atlases, books about Japan, haiku books, pictures of Japanese art, population maps, pictures of Japanese landscapes, resource people, stories and poems about Mount Fujiyama.

Methods of Approach

Let the students in about two or three minutes write all the words they think of when they hear the word Japan. Save these word lists to be used in a comparison activity at the end of the unit.

Give the students a definition of physical features and let them discuss what they feel are examples of the components of a physical environment. Do the same thing for cultural features. Then show the class pictures of landscapes which include both types. Let them pick these out and develop their own definition of landscape.

Activities

Let the students locate Japan on a globe, decide what the major landforms are and find out what types of people live there. Be certain to mention that Okinawa will soon be Japanese again.

Have someone knowledgeable about Japan talk to the students about its landscape and perhaps show slides to the class. Let the students pick out examples of some of the physical and cultural features in them.

Let the students research what Japan's physical environment is like, what kinds of islands it has, and what controls cause the climates to vary in Japan.

Let the students build a small plaster volcano to illustrate and understand volcanic Japan.

What kinds of earth disasters must Japan be prepared for with her landform types? Let the students decide what kinds of disasters their area must be prepared for and what they would do if they happened. Are they mostly from the earth, sea, or other flowing water, or sky?

One of Japan's symbols is Mount Fujiyama. Let the students discuss why this is a good symbol for Japan. Let them read stories and poems which the Japanese have written about it and try writing some about it themselves, especially in the form of haiku.

While studying the types of landforms upon which Japan is built, let the students determine on what major landform their own town is built.

Let the students determine which volcanic areas of the world are major tourist attractions. Let them also decide what they would do in a volcanic eruption and what some of the problems would be.

Let the students draw Japanese air from prints, such as summer mist, spring rain, snow types.

Let the students exchange art work of their own area with students in Japan. Discuss the likenesses and differences.

Divide Japan into landscape regions based on terrain and climate. Show the students paintings, photos, drawings, etc., of Japan and let them describe the landscape.

Let the students collect pictures of Japan and decide what landscape region they belong to.

Let the students gather Japanese poems (haiku especially) which reflect the Japanese landscapes.

Let students look at pictures of Japanese landscapes and write their own impressions about them in haiku form.

Let the students paint or draw pictures of Japanese landscapes. Perhaps a few students may want to try Japanese styles of a minimum use of lines to depict their scenes.

Let the students find out what some of the cultural features are on the Japanese landscape; that is, what evidence is found on the landscape of religious, economic, recreational, social, aesthetic, and artistic activities.

Let the students decide what Tokyo's site and situation are, why it was located where it is, and why it has grown to such importance. Let them find out if it has always been Japan's capital and always had the same name.

Japan has highly developed hydro-electric power. Let the students decide what characteristics a river must have for the development of this power and locate some major developments on a map.

Let the students design and build a small Japanese garden. Use cards at various points to tell what the location of the stones and plants mean.

Let a student find in the library a first-hand account of an earthquake and read it to the rest of the class. Then let the students find out about the Great Earthquake of Japan in 1923. Let them determine how new Japanese buildings are being built to withstand earthquakes and how these compare to the ones being built in California and Montreal.

## Problem Set B

### Problems

- What are the people doing in Japan?
- How are they doing these activities and why are they doing them?

### Generalizations and Understandings

Man is influenced by the land on which he lives and he in turn influences the land.

Man's activities are related to his culture, the level of technology available and the resources of the country.

Intensive farming is usually the result of a land shortage.

Extensive farming occurs where land is relatively plentiful.

### Concepts

industries
intensive farming
extensive farming

### Tools and Resources

Reference books, atlases, books about Japan, paper for origami, yellow pages of large-city phone books, resource people.

### Methods of Approach

Let the students discuss in class all the things which they think they know about the types of activities which the Japanese are doing. These may be in any area--baseball, television, Kabuki theatre, shipbuilding, anything, as long as it is logical. Let the students check to see if they are right.

Let the students in a class discussion decide on a definition of industry and discuss the types they would expect to see in Japan and why.

Activities

Let the students decide what manufactured goods they usually associate with Japan and determine what advantages Japan has for their production.

Let students research the meanings of heavy and light industries and map major industrial areas of Japan on an outline map. Let the students decide why industrial areas tend to grow larger. Let them decide what factors seem to be important in the location of Japan's major industries.

Let the students make a list of the things which we use from Japan and stress Japanese resourcefulness.

Let the students make a display of as many products from Japan as they can find in their homes.

During the Christmas season, discuss where many toys are made.

Let the students working in small groups examine charts, graphs, newspaper articles, and history to determine some of the factors which have enabled Japan to become a major industrial power.

Let the students walk through a variety store, a grocery store, a department store, a hardware store and make lists of products that were made in Japan.

Let the students examine the yellow pages of large-city telephone books and find Japanese brand names for whom there are distributers, such as Yamaha products, Honda motorcycles, Toyota cars, Sony electronics, and the like.

Let the students discuss the importance of people in the Japanese economy in such realms as labor, procuring new markets, maintaining foreign markets and home markets, and the like.

Let the students look for ways in which improvements in technology have lessened the Japanese dependence on their physical environment.

A load of oranges is taken from Kitakyushu to Sendai. Let the students decide the relative merits of transportation by road, by railroad, and by water and the possible routes by each means.

Give the students characteristics of extensive and intensive farming. Let them then decide which type Japan utilizes the most and explain why.

Let the students determine Japan's seasonal farming based on its climate, with monsoons, and draw pictures illustrating the farming.

Write to a rice growers association or processor (Beaumont) for information on rice growing. They sometimes send a rice-growing kit so that the children can grow rice in the classroom.

Let the students decide why Japan terraces slopes for rice which we would feel are too steep for anything but pastures or for leaving in their natural state.

Let the students relate the climate and rainfall to the production of rice and the importance of land preservation by the Japanese.

For a better understanding of hand labor, have the children pretend they are transplanting rice and let them do it to the rhythm of Japanese folk music.

Let the students compare rice and wheat food values.

Have a unit study on rice and compare Japanese and American rice-producing areas, farm sizes, production methods, yields, consumption of rice per capita, and uses of rice.

Let the students compile a cookbook of recipes using rice.

Let the students determine where Japan's major forest areas are, what kind of wood they have, what they use wood for, why they must import wood, and from whom they import it.

Water is said to be one of man's most important resources. Let the students decide why this is so. Let them make charts, drawings, or collections of Japan's uses of water. Let them also determine what Japan's water problems are.

Let the students determine where Japan fishes in the world. Why are fish so important to Japan and why are cattle not very important?

Using information gathered at the local stores, let students compile a table of Japanese fish sales under the headings fish, how processed, where packed, and price per pound.

Let the students, working in small groups, decide why Japan's roads and railroads are where they are by examining maps of various phenomena, such as major agricultural areas, landform regions, harbor sites, climate maps, population centers, and resort areas.

Let the students determine what Japan's pollution problems are and some of the ways they are or are not coping with them.

Let the students determine to what countries the Japanese have emigrated in recent times and put these on an outline map.

Let the students study and try origami (paper folding) and research what types of paper the Japanese make and why. Let them determine other uses the Japanese make of paper.

Dramatize a story on Japan and bring in costumes for it.

Make tea cakes and have the children prepare a tea party following the ceremony and customs of the Japanese people.

Let the students learn a Japanese song such as "Sakura," and have a tea party with green tea and fortune cookies.

Have the students take off their shoes before entering the room and sit on the floor for a program on Japan.

Have groups of students create a Japanese look in the classroom. Let them use anything to display that has anything to do with Japan.

Have students report on amusements in Japan.

In Kabuki, two sticks are struck together as a warning when the crisis in a play is approached. In a class discussion, let the students decide how we signal such points in our television programs and movies.

Let the students learn about and try Japanese flower arranging and fan dance.

Let students who have lived in Japan give first-hand reports.

Let the students draw a mural of Japanese life.

## Problem Set C

Problem

- In what ways can Japan be compared to other countries?

## Generalizations and Understandings

Places are both alike and different from each other.

The higher the level of technology a nation has, the more dependent it is on international trade.

The higher the level of technology a nation has, the greater the variety of jobs it has.

## Concepts

international trade
technology
dependency

## Tools and Resources

Reference books, books about Japan, resource books.

## Methods of Approach

Let the students in a class discussion tell some of the ways they think they are like the Japanese and ways they think they are different. Ask if any of them know of goods which the Japanese import from us.

## Activities

Let the students look at census material and determine the population density in the area around their school; then stand outdoors in this pattern. Let the students find the latest available statistics on the population and population density of Japan. Let them determine how many square yards there are per person in the densest areas of Japan and mark this area off outdoors or on classroom floor. Let them discuss what some of the problems might be from living so close together and how the Japanese try to alleviate the situation, such as adding space with skyscrapers, parks, and high-speed trains to get the people to less dense areas for vacations and the like.

Let the students mark the most densely populated areas of Japan on a map and the most densely populated areas of the world. Compare the latter with Japan. Let the students then decide why Japan's major population centers are where they are, what drew the people to them and why they stay.

Let students, by writing the Japanese consulate in Houston if necessary, or by consulting reference books, determine what Japan imports from Texas. Let them find, within each major category of Japanese exports, examples of these Japanese products in local stores.

Let the students choose a Japanese town of about the same size as theirs and write to its students at the same grade level. Let the students tell their "sister city" pen pals what their parents do and why their particular jobs are found in your town and ask about theirs.

Let the students exchange letters with Japanese students in towns about the same size as theirs and compare resource bases, types of stores, amusements, schools, medical facilities, and the students' chores in their homes.

Let the students make a display of Texas exports to Japan.

If you are close to a large Texas city, try to get a Japanese businessman to talk to the class about the business relationship between Texas and Japan and the raw materials which they get from us and what they do with them.

Let the students compare Japanese rice farming with Texas rice farming.

The average Japanese farm size is about two and one-half acres. Let the students mark this off in an area around the school and walk its perimeter to get the feel of the size. Let them visit a larger farm in your area to note the differences in sizes. Then let them discuss the methods of farming the Japanese use as a result of the small sizes (intensive farming). Let them also determine how farming differs in northern Japan from southern Japan.

Let the students study where Japanese fishing boats go. Let the students compare the everyday diet of the Japanese to the Texas diet in common foods and determine what seafood products from Japanese fishing are available in their grocery stores.

Let the students compare and contrast methods of farming in Japan with those of the United States through group reports, prepare pictures from travelogs and magazines to illustrate the reports, and prepare model farms of both the U.S. and Japan.

Make a drawing comparing average American and Japanese farms as to size and production.

Compare conservation methods in the U.S. and Japan and prepare models illustrating them.

Let the students compare how the 13 American Colonies learned many useful things from the Indians to Japan's ability to learn from others and adapt to make a strong country.

Let the students set up an international trade market for various countries. Let them set it up as a fair, then different children represent different countries and display trade items.

People often say that the Japanese imitate and adapt the inventions and findings of others. The same thing was said about the United States during its early days of inventions and industrialization. Let the students find the source of inventions which are thought to be American and see how many were actually invented by others. Let the students then find Japanese inventions and contributions to our Western way of living.

Let the students, studying land use maps, mineral maps, and charts, compare Japan's availability of raw materials to that of other nations and decide whether Japan has enough raw materials to become a highly industrialized nation. Then let the students, working in groups with each taking a different kind of industry, decide what the necessary raw materials are for that kind and where the Japanese might get them. Let them try to get pictures of the materials and industries.

Let the students compare fish farming in Japan with fish farming in Denmark.

Let the students compare Japan and the United Kingdom in as many ways as possible. These could include the physical environments and economics--including industries, markets, resources, imports, gross national products, and average incomes.

Let the students compare or contrast Japan to the U.S. in such ways as agriculture, homes, climates, cities and towns, resources, recreation preferences, transportation facilities, industry, types of education at your grade level.

Let the students discuss why industrial nations have more varieties of jobs within their cultures than non-industrial ones.

Let the students compare via pen pals their school system with some school in a city or town approximately the same size in Japan.

Let the students make dioramas of the various geographical sections of Japan and compare them with a similar area in the U.S.

Let the students determine why Japan and other parts of Asia grow tea and the U.S. does not.

Have a unit on tea: where it is grown, production methods, yields, comparison of Japanese and American consumption of coffee versus tea, ceremonies, the coffee break versus the tea ceremony, and the part coffee and tea play in the lives of those involved.

Let the students mark on an outline map major tea-producing areas of the world. Then let them find out how much tea is consumed within these countries and which ones are prime exporters of tea. Let them then decide why Japan does not export much tea.

Show how much land is wasted in fences and roads in the U.S. and compare to Japan's utilization of land with waste often held to a minimum. Build a model farm for the U.S. and for Japan.

Japan uses narrow-guage railroads, which have lighter rails and roadbeds and bridges that need not be so strong as the standard guage and which can contain sharper curves than wider lines. Let the students, through research, learn about the different railroad guages and where the U.S. got its standard guage. Let them examine landform maps of Japan and decide why narrow-guage railroads are an advantage to Japan. Let the students decide in a class discussion what would be the disadvantages of having more than one guage in a country. The railroad from Durango to Silverton, Colorado, is one of the last narrow-guage railroads in the U.S. Find out if any of the students have ridden on it. If so, let them describe it and its purpose. Otherwise, let one of them find out about it and tell the class in a report.

What reflections of Japan do we find in our everyday lives, such as housing types (inside and out), gardens, poetry, art (especially in French Impressionistic art), gadgets, cards, motorcycles, electronics, textiles, canned seafoods, cultured pearls, etc.

Let students examine Japanese paintings and try to find influences of the types of art in modern art, impressionistic art, advertisements, and the like.

Let students listen to Japanese music and see if they can find any influences in their own modern music. Let them listen to modern music of Japanese teenagers and see if there is any similarity to their own.

Show how Japan is the buffer zone between the East and the West.

Let the students determine what Asian and international organizations the Japanese are strongly involved in and which ones the U.S. is also in.

Let the students compare Japan's average educational level and income levels, or literacy rate and gross national product, to those of the U.S., the U.S.S.R., some European country and some Latin American country. Let them draw their own generalizations.

Let the students formulate their own definitions of international trade, technology, and dependency. If the students have a hard time getting started, give them some example definitions, but let them come up with their own definitions.

## Problem Set D

### Problem

- How do the Japanese perceive themselves in relationship to their own surroundings and the rest of the world; that is, how do they look at or feel about their own land and its relationship to others?

### Generalizations and Understandings

How one perceives or feels about his local and national environment in relation to others will determine to a large degree what he does with them.

### Concept

environmental perception

### Tools and Resources

Books of Japanese arts and products, Japanese short stories and poems, Japanese Times newspaper, resource people, New York Times.

## Methods of Approach

Ask some Japanese people or someone who has lived in Japan for a while to write as many words as possible in one or two minutes which describe Japan. Save these for the last activity. One might even ask a veteran who fought against the Japanese to do the same thing.

## Activities

Ask a Japanese businessman to talk to the class about his views on Japan's relationship to the rest of the world.

Let the students read the English translation of the Japan Times newspaper and decide what differences or similarities there are in presenting news compared to their newspaper or the New York Times, such as amount and type of international news, points of view, types of articles, and the like.

A writer once said that Japanese women, children, and even men are proud of possessing a love and reverence for nature. Let the students working in groups find expression of this love and reverence for nature in the arts and products of Japan and share them with the class. Then let them see if they can find such love and reverence in American culture and share their examples of pro or con with the class.

Let the students in group discussion decide on some ways they could increase their awareness of the beauties of nature and even increase the beauty of nature around them. Let them follow through on some of their ideas.

Let the students find evidence of how the love of nature is found in their everyday lives.

Let the students decide through Japanese poetry what some of the favorite flowers and trees of Japan are and collect poems for each kind. Let them discuss other evidences besides their poetry which show that the Japanese love flowers and trees; that is, where else are they found in Japanese life?

Let the students read Japanese poems and short stories to decide how the writers feel about such things as their relationship to their environment and to others and Japan's relationship to other countries and groups. Are there any other evidences of these anywhere?

Let the students discuss how Japan's international trade reflects her attitude toward relationships with other nations.

Dr. Arthur Dolman, the historian, has pointed out that before World War II in the 1930s, two factions were vying for political power in Japan. One, the conservatives or traditionalists, wanted Japan to grow powerful by remaining very Japanese in customs and by conquering other lands. The other, the liberals for the period, wanted Japan to Westernize and to grow strong by developing international trade. Let the students discuss these two stands and look at the effects in Japan of both factions in the last 40 years.

Let the students determine how Japan has historically viewed the sea and how she utilizes it.

Let the students, once again, write in a minute or two all the words that now come to mind when they hear the word Japan. Compare these lists with those the students made at the beginning of their study of Japan. Let them discuss any similarities or what they now feel are misconceptions on the first list. Let them next look at the lists developed by Japanese or other people who have lived in Japan, or the veteran. Let them discuss these lists for similarities and differences.

Let the students devise a definition for environmental perception.

# APPENDIX

**LIST OF TRANSPARENCIES**
**BY TITLE OR CONTENT**

## Unit I: Our Globe and Grid

1. Geography: A study of the characteristics of places, the connections between places and the arrangement of things both cultural and natural on the face of the earth.

2. World map - polar projections

3. World map in global form

4. Plain sphere

5. Globe with grid and North and South Pole, equator and prime meridian marked.

6. Globe with grid lines and plug out to show origin of parallels' and meridians' angles.

7. The grid: Parallels are parallel, meridians and parallels are at right angles, meridians converge.

8. Round earth on flat paper: conical, cylindrical and azimuthal projections.

9. Qualities of a map projection: equal area, distance, shape, direction.

10. Conic map projection
Parallels: concentric circles, spaced equally
Meridians: radiating straight lines, true on 1 or 2 standard parallels
Merit: small distortion
Use: middle latitudes, series maps

11. Orthographic projection (polar)
Parallels: circles spaced closer near periphery
Meridians: radiating straight lines, spaced equally
Merit: visual
Use: polar projections, hemispheres

12. Mercator projection
Parallels: horizontal, spaced closer near equator
Meridian: vertical, spaced equally, on equator
Merit: conformal straight loxodromes
Use: charts, world maps

13. Eckert projection
Parallels: horizontal, spaced closer near poles (poles are lines half the length of equator)
Meridians: ellipses, spaced equally, true on equator, sine curves spaced equally, true on equator.
Merit: equal area
Use: world maps

14. The grid again
Lines: parallels and meridians; measurements: latitude and longitude
Special lines: meridians (prime meridian and international date line), parallels (equator, Tropic of Cancer, Tropic of Capricorn, Arctic Circle, Antarctic Circle)

15. Sphere showing Arctic and Antarctic Circles, Tropics of Cancer and Capricorn, equator, international date line and prime meridian

16. Rotation: day/night; ocean currents, time zones, atmospheric circulation, international date line

17. Map of time zones of the world

18. The earth as a clock face: 24-hour changes

19. Causes of seasons: circle of illumination, revolution, rotation, inclination and parallelism

20. June 20

| | | |
|---|---|---|
| Northern Hemisphere toward sun | Longer days<br>Sun's rays more direct | + heat = Summer |
| Southern Hemisphere away from sun | Shorter days<br>Sun's rays less direct | - heat = Winter |

December 21

| | | |
|---|---|---|
| Northern Hemisphere away from sun | Shorter days<br>Sun's rays less direct | - heat = Winter |
| Southern Hemisphere toward sun | Longer days<br>Sun's rays more direct | + heat = Summer |

21. Diagram of sun positions at summer and winter solstices

22. Causes of seasons (same as No. 19)

## Unit II: The Essence and Use of Maps

1. Map essentials: grid, symbols and legend, scale, title, and date

2. Map scale: Statement--1 inch represents 30 miles
   Representative fraction--1/2,000,000
   Linear

   

3. A map? View without map essentials

4. Map symbols

5. Isolines: isohyet (precipitation), isobar (air pressure), contour lines (elevation)

6. Map of Texas' average annual precipitation

7. Contour map

8. What can we read from maps?
   Descriptive ideas: location, elevation, distance
   Interpretive ideas: comparisons, relationships, generalizations

9. Types of maps
   General Maps: Topographic, atlas maps of large regions, world maps of general content
   Special Maps: Navigation charts, thematic or single-factor, land-use maps, political and historical

10. Basic map skill: orient map and note directions

11. Basic map skill: recognize scale and compute distance

12. Basic map skill: locate places on maps and globes

13. Basic map skill: express relative location

14. Basic map skill: read symbols

15. Basic map skill: compare maps and make inferences

16. Mercator projection of world map centered on the Atlantic Ocean

17. Scene of classroom with map oriented and on the floor

## Unit III: Climate and Man

1. Climographs - different latitudes: Duluth and San Francisco

2. Climographs - same latitude: Calgary and London

3. Map of major climates of the world

4. Why different climates?

| Controls | Acting Upon | Elements | Produce | Patterns of Climate |
|---|---|---|---|---|
| latitude | | temperature | | |
| elevation | | precipitation | | |
| mountain barriers | | pressure | | |
| ocean currents | | winds | | |
| land masses | | humidity | | |
| water bodies | | | | |
| storms | | | | |

5. Map of average annual precipitation of Texas

6. Map of Texas' growing season

7. Map of United States' climates

8. Map of major climates of the world (Same as No. 3)

9. Why does it rain?
1 cubic foot of air--maximum water vapor capacity:

| Temperature ($F^o$) | Water Vapor in Grain (Grain=1/7000 of a lb.) |
|---|---|
| $30^o$ | 1.9 |
| $40^o$ | 2.9 |
| $50^o$ | 4.1 |
| $60^o$ | 5.7 |
| $70^o$ | 8.0 |
| $80^o$ | 10.9 |
| $90^o$ | 14.7 |

5.2 grains difference

10. Types of rainfall: orographic, convectional, frontal

11. Diagram of orographic

12. Diagram of convectional

13. Diagram of frontal (cP vs mT)

14. Diagram of an air mass

15. Air masses in Texas:
cP (continental polar)
cold, stable, low humidity
cT (continental tropical)
hot, dry, summer only
mT (maritime tropical)
warm, unstable, high humidity

16. U.S. map of daily weather showing cP and mT air masses

## Unit IV: The Face of the Earth

1. Texas land form regions map
Coastal Plains
Gulf Coast Plain
South Texas
Piney Woods Section
Post Oak Belt
Blackland Prairie
North Central Plains
Grand Prairie
Cross Timbers
Lower Plains
Great Plains
High Plains
Edwards Plateau
Llano Basin
Mountains and Basins (dry mountains and basins)

2. Picture of Texas Coastal Plain

3. Picture of Texas Beach

4. Picture of Texas Plateau

5. Picture of Big Bend area

6. Picture of High Plains

7. Picture of Piney Woods

8. Picture of Blackland Prairie

9. Picture of dissected Edwards Plateau

10. Texas land form regions map (Same as No. 1)

11. Maps of United States land form regions

12. Land form classification--major landforms: plains, hills, plateaus mountains; minor land forms: valleys, mesas, bluffs, beach forms

13. Shaping of the land from within: diastrophism and volcanism; from without: weathering, erosion, deposition, man

14. Rocks of the earth--composition classes of rocks: igneous, sedimentary, metamorphic, consolidated and unconsolidated

15. World map with mountain areas

## Unit V: Resources, Man, and His Environment

1. Conservation has many faces: air, soils, water, forest and range, minerals, wildlife

2. Conservation measures: social objective (human welfare), resource objective (maintenance of the quantity and quality of resources) and direct conservation measures (preservation, restoration, beneficiation), efficient use, re-use, substitution, and inventory

3. Conservation eras: acquisition and disposal, reservation and custodial management, and intensive management

4. Soils abuse: gully erosion, sheet erosion, wind erosion, soil depletion
Conservation measures: contour cultivation, terraces, cover crops, crop rotation, land classification

5. Water abuse: pollution, floods, water supply, low water table.
Conservation measures: recycle cooling water, reclaim sewage, check dams, land management, pollution abatement

6. Forests abuse: fire damage, excessive cutting, disease and insects, damage by livestock
Conservation measures: fire prevention and suppression, disease and insect control, improved cutting practices, sustained yield

7. Wildlife abuse: damaged habitats, excessive harvesting, injurious exotics, undesirable increases
Conservation measures: preservation of species, refuges and sanctuaries, balanced harvesting, restocking, international treaties

8. Minerals abuse: waste of reservoir energy (oil), loss in mining of coal, strip mining and lost land, and inefficient use
Conservation measures: re-use of scrap metal, mining low grade ore

9. Drawings of land yesterday, today, and tomorrow

10. The existing State park system: water, 26 percent; historic, 1 percent; recreation, 31 percent; scenic unique, 42 percent

11. Resources change: Culture and technology acting upon neutral stuff yield resources

12. Drawings of East Texas then (Caddo huts) and now (Dangerfield steel mill)

13. Resource groups:
I. Sustainable, improvable, and increasable agricultural lands, forest lands, fish and wildlife
II. Nonimprovable, nonincreasable, depletable
A. Exhaustible: fuels--coal, oil, gas; minerals with low recovery--sulfur, gold, and the like
B. Depletable but once in use have high ratio of re-use: copper, iron, and the like
III. Continuous or endless in time
A. Those beyond influence and damage by man: solar, greater space
B. Those endless in time but susceptible to damage by man: air, site, scenery, oceans, limited space, macroclimate

14. Resource conflicts

| | | |
|---|---|---|
| development | | preservation |
| irrigation | | urban water |
| reservoirs | | farm land |
| mining | versus | refuges |
| fish | | dams |
| power | | navigation |
| flood control | | recreation |

15. Resource perspectives

| Rural | International | Urban |
|---|---|---|
| soil | fisheries | scenic |
| vegetation | migratory birds | air |
| water | | water supply |
| wildlife | | recreation |

## Unit VI: Urban Man

1. Drawings of early primitive village and primitive hunting and fishing

2. Human settlements: Population size increases from home to hamlet to village to city to metropolis to megalopolis to ecumenopolis.

3. Graph of Texas urban population growth from 1930 to 1960

4. A city is a settlement with a specific kind of government chartered by the State, a place having a great variety of goods and services in a compact area, and characterized by a large number of people living there.

5. Why cities and towns developed: ability to store cereals (grains), ability to collect and store livestock, development of trade, proximity to fertile land, accessibility to trade routes, and ability to provide power beyond human muscle

6. Sites cities occupy: crossroads, trading centers, railroad junctions, junctions where canoes are transferred (breaking of bulk cargo), intersection of trade routes, twin cities on opposite shores or bays, and river sites--mouth, head of navigation, rivers' confluence, outside bend in river, rapids, canals and river junction, junction of river and land routes, water power sources

7. Drawing of different types of city sites with bodies of water and railroads

8. Maps of Chicago's site and Chicago's situation

9. Map showing a city's hinterland (trade area) in a hypothetical landscape

10. Ways of delineating a city's trade area (hinterland) by newspaper delivery by mail, bank customers, customers for stores, and charge account customers

11. A page from the yellow pages of a telephone directory

12. Functions of cities: commercial and trade centers, industrial-manufacturing, transportation centers, railroad centers, political centers, capitals, and recreation centers

13. Functions of cities (continued): mining towns, college-university centers; diversified trade-manufacturing; and others--military, religious

14. Diagram of city patterns showing CBD (central business district) in circular, rectangular, and linear patterns

15. Generalized city structure in circular pattern from center outward: retail; wholesale; 3rd class residential; 2nd class residential; 1st class residential; suburban and manufacturing; farms, forests, and grasslands

16. Urban Zones: CBD (central business district)--banks, retail stores, hotels, offices, theatres; wholesale--large warehouses, heavy trucks, railroads; 3rd class residential--old mansions deteriorating, old houses converted to cheap apartments; 2nd class residential--old town houses in a row, old individual homes; 1st class residential--single-family dwellings with medium to large well-kept yards; suburban--shopping centers, single-family dwellings with yards

## Unit VII: World Regions

1. Geographic facts: applicable only in a specific setting; i.e., Austin's annual precipitation is 35 inches
   Concepts: a category of meaning; i.e., city or river or tropical region
   Generalizations: expresses relationships between concepts; i.e. major cities are usually located on or near a body of water

2. Study of the earth as the home of man, using regional perspective, sub-regions, conceptual elements, and skills

3. A geographic problem involves special relationships and accessibility: Why is something located where it is? Why is a pattern of distribution like it is?

4. Organizing framework per grade: regions by units, September to June. Modes of inquiry per region-unit: population--distribution, characteristics; political status; natural environment--climate, land forms, minerals, and the like; ways of earning a living; problems and potentialities; skills to be developed and used--globe, map, photographs, graphs and charts

5. Norway versus Alaska Panhandle and British Columbia: Marine West Coast climate, similar vegetation, similar soil, coastal, mountainous, recent heavy glaciation, similar landforms, east coasts of oceans, prevailing westerlies, ocean current, equal latitude

6. Map of major climates of the world

7. Map of land forms of the world

8. Map of natural vegetation of the world

9. James' Culture Regions: European, Soviet, Anglo-American, Latin American, North African-Southwest Asian, South Asian, Southeast Asian, East Asian, African, Australian-NewZealand, Pacific
Russel and Kniffen's Culture Worlds: European, Oriental, Dry, African, Polar, American, Pacific
Wheeler's Major World Regions: Europe, U.S.S.R., Middle East, Orient, Pacific World, Africa, Latin America, Anglo-America

10. Map of James' World Culture Regions

11. Map of Russell and Kniffen's Culture Worlds

12. Map of Wheeler's Major World Regions

## Unit VIII: Japan: A Regional Study

1. Map of predominant economics of the world

2. Map of Japan

3. Map of Japan and United States compared in latitude

4. Map of Japan showing main railroads and arterial roads and proximity to rest of Asia

5. Map of major climates of the world

6. Maps of Japan showing average January temperatures and average July temperatures

7. Maps of Japan's natural vegetation

8. Graph of Japan's iron ore production and imports

9. Chart of Japanese dependence on foreign economics: food and industrial material, percentage imported

10. Graphs of Japanese foreign trade: imports by class and exports by class

11. Agriculture map of Japan

12. Characteristics of intensive agriculture: irrigation, terracing, multiple cropping, intercropping, transplantation, fertilization, small fields, no machinery

13. Map of an ancient agriculture pattern

14. Drawing of rice cultivation

15. Drawing of harvest of tea leaves

16. Graphs of Japan's increase in total population and live birth and death rates

17. Japan: An Island Nation--A population approximately half that of the United States lives in an area about the size of California. Eighty-five percent of the land is mountains. Japan leads the world in the production of ships, cameras, and electronic equipment. It is a major producer of steel and textiles and has the world's fifth largest merchant marine. Japan has coal and a few other minerals, but must import 90 percent of its iron ore, 98 percent of its petroleum. Japan has the highest standard of living in Asia--and it is rising!